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THE LARYNGOSCOPE.

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ORIGINAL COMMUNICATIONS.

DEVIATED SEPTA IN EAR DISEASES, WITH A NEW OPERATION FOR THEIR CORRECTION.*

BY DR. J. OSCROFT TANSLEY, NEW YORK.

In the Spring of 1876, Cornelius R. Agnew, whose memory I revere and whose precepts I find influencing me more than any other medical associate, gave me the care of his ear patients at Manhattan Eye and Ear Hospital, with strict instructions that I should pay close attention to, and treat, the nasal and naso-pharyngeal difficulties which I should find complicating the ear affections. These instructions and the subsequent advice and suggestions in individual cases began my study of the relations of the diseases of the nasal and tympanic cavities.

I early recognized the importance of deviated septa in causing hyperæmias, congestions and acute processes, and later, hyperplastic and thickened conditions of the mucous membrane of the drum-head and tympanic cavity, simply by their mechanical impediment to nasal breathing and nasal clearings; and I have upon my books the names of patients as far back as 1877, the convexity of whose deviated septa I attempted to, and in some cases did, remove by means of a bistoury, much to their relief and improvement.

*Read before the American Otological Congress, Washington, D. C.

In talking these cases over with my good friend, Dr. Bucklin, of New York, he suggested sawing these convexities off, and for several years we did this operation, by using an ordinary jeweler's saw, with a hand-vise fastened to its proximal end to answer as a handle. From this crude instrument grew the Bucklin saw, than which there is to-day none better.

As I said above, deviated septa affect the ears solely in a mechanical manner, in fact, all nasal troubles affect the ears in the same way. The upper part of the nasal cavity may have polypi, hypertrophies, etc., but if the lower portion, or *drain portion*, of the nose is clear and unobstructed, the ears are not affected by these conditions.

The rhinologists have placed considerable importance upon pressure between the superior turbinated and septum, but after twenty years' observation of these cases I cannot see that it affects the ears in the slightest by its absence or presence, although it may be a factor in the causation of ethmoidal or frontal disease.

We, as otologists, have simply to look for perfect nasal drainage, ethmoidal and sphenoidal disease; posterior hypertrophies, nasopharyngeal and pharyngeal troubles.

Deviated septa are among the most troublesome difficulties that we have to meet, and are found of varying degrees and importance. Some are so slight that a few horizontal cuts with a saw, antero-posteriorly, is all that is necessary to produce the required contraction of the convex surface; others have to be sliced off with the saw and by hand, in a more or less radical manner, always cutting from below upwards.

One little detail which is not always thought of by operators in these cases, is to avoid union between the cut surfaces and the opposite turbinate surfaces; something must be used to separate the two surfaces, else bridges will be formed which have to be removed later, and which also prevent the contracture which we desire to obtain, to draw the septum back into the perpendicular plane.

Some do not use anything, others use cotton or gauze, others rubber tubing or pieces of cork whittled into the desired form. Some think that pressure is necessary to get the septum back into its place; but the fact is that pressure cannot be borne and should not be used because of danger of affecting the nutrition of the parts, and causing necrosis and an opening into the fellow nostril. I have used for some time the Goodwillie nasal tubes and am perfectly satisfied with them, but never use them sufficiently large to cause pressure, and lately I am having them made with the upper edge prolonged by a fin of rubber to separate the higher portions where that is necessary.

There are other cases in which the septum is so far deviated to the one side that the cavity is nearly or entirely closed. These are the cases which have caused me the greatest annoyance, and I have done all the operations which I have seen or heard described. I have broken them up forcibly when the patient was under ether, and splinted the broken septum, bony and cartilaginous, in every way that has been suggested, with cork or rubber splints made purposely, rubber tubing and gauze packing, gold and silver pins, etc., too numerous to particularize or even name, because they have proven entirely unsatisfactory to me in every case. In fact, I at one time gave up operating upon these excessively deviated septa, and contented myself by getting a free or freer passage by removing the inferior tubinated bone in its entirety by sawing close to its attachment in the anterior three-fourths, and cold-snaring the remaining quarter.

About four years ago I perfected an operation which I have done several times in these cases of excessive deviation, and each time with satisfaction to the patient and to myself, and that is the operation suggested in the title of my paper. It is done at two sittings, about a week or ten days apart. I have always done it under cocaine, as I prefer this course in all nasal and naso-pharyngeal operations, as being more safe than anæsthesia.



DIRECT VIEW.
FIG. I.



PROFILE.—FIG. II.



DIRECT—FIG. III.

The operation is begun by making a horizontal cut with a Graefe knife through the mucous membrane and perichondrium on the concave side of the septum at *C* in Fig. I, and from *A* to *B* in Fig. II. It passes as far back as may be necessary and comes forward to the muco-dermal line. If the parts are well cocainized there will be but little hemorrhage after the cut is made; then the mucous membrane is carefully dissected upward and downward from the cartilage and vomer if necessary. This is done more easily than one would imagine, and I have always found that a strong and broad Graefe's knife which was dull was the best instrument to use.

When the dissection has been fully made, then the septum is forcibly pushed toward the concave side, the upper portion downwards, and toward the concavity, and the lower portion upwards and to the concavity, and after being manipulated and pressed as described, it is held in its new position by antiseptic cotton or gauze until the septum assumes the appearance or situation as seen in Fig. III. The two denuded surfaces of the septum are brought into close apposition as the drawing shows, and the mucous membrane hangs rather redundantly upon the previously concave side.

The manipulations of the septum are done with a strong probe or handle of a scalpel, or anything which is strong or smooth, for it is not our desire to break or injure the septum in any way, and for that reason a forceps must not be used.

To retain the septum in its new position until union takes place, I have found the best is cotton rolled upon a square aluminum probe and thoroughly soaked in Panas solution, and smeared and covered lavishly with antiseptic vaseline.

The dressings are not disturbed until union has taken place, which is usually in ten days or two weeks, and it has been my habit to spray the parts gently once daily, and a number of times during the day to have a mild antiseptic solution dropped into the nasal cavity and upon the dressing. Usually I have employed the Panas solution for the purpose. At the end of two weeks the dressings are taken out and the projecting spur is removed, and treated as is usual in the more simple cases.

In those cases which it has been my pleasure to operate in this way, the finality was that it would have been difficult to imagine that there had been much of any deviation ever existing in the case, so thorough and perfect was the result.

Goutiness in its Relations to Diseases of the Ear. Dr. A. H. Buck. (*Medical Record*, May, 1897.)

Cases are cited in which the diathesis was observed manifesting itself in the ear. Calcareous deposits are frequently seen in such instances. Errors in diet bring about aural symptoms, which improve under dietetic management. Severe pain is at times complained of, without much local change (microscopically).

In these cases the author has found dilated and therefore paretic blood vessels, retarded circulation, escape of the watery elements of the blood, both upon the free surface and into the interstices of the tissues, proliferation of the cellular elements of the connective tissue stroma, and the swelling or increase in bulk of the tissues thus affected.

M. D. L.

A NEW OPERATION FOR THE CORRECTION OF DEFLECTIONS OF THE NASAL SEPTUM.

BY E. B. GLEASON, M.D., PHILADELPHIA.

In THE LARYNGOSCOPE for November, 1896, was published a brief description of "A New Operation for the Correction of Deflections of the Nasal Septum." Although the operation seems simple enough and requires less than two minutes time for its successful accomplishment, by one familiar with the details of the procedure, yet it seems that a few more words, as regards minor details, and the complications liable to occur in difficult cases, are necessary in order to secure the uniform success that operation is capable of yielding. One of my correspondents, after performing the operation, had the misfortune to find that the septum was not only not straight, but that the wound made by the saw had failed to unite. In reply to his letter, I advised that he do a secondary operation, using sufficient force to fracture the upper portion of the tongue-shaped flap, and carrying his finger far back into the septum to fracture the bony part of the septum posterior to the saw-cut, so that all portions of the septum would be in the median line when his finger was withdrawn. I also advised that the Allen's tube, which I sent him, should be dropped into the fossa after the operation, and that the patient should wear it as long as there was any danger of a reproduction of the deformity. The following extracts from a letter, subsequently received from this gentleman, are interesting in this connection:

"I did it (the operation) one month ago to-day, and to-day the result is as near perfect, I believe, as is possible. Breathing normal and very free on both sides, and more so on the formerly obstructed side." * * * "The septum is firmly attached to the floor of fossa, and on the left (originally unobstructed) side, as far back as two-thirds of length of fossa, a perfectly plain vertical surface." * * * "I beg to call your attention to the contrast between your article in THE LARYNGOSCOPE and your letter, from my point of view, and especially from that of the general practitioner, very many of whom are subscribers. I believe your operation, as described in your article, is in danger of being damned by such results as that of my first

operation. I am a fair nasal operator; have done many deflection operations by older slitting methods. If, then, your letter was needed to save me from a permanent failure, be assured there are many who will get in the same fix." * * * "In short, I sincerely trust you will write, before long, another article, going more into details; describing possible difficulties and complications, always bearing in mind that you are to write down to a class of men, who, not being within sound of your voice, or in sight of your manipulations, can easily misunderstand and make errors of omission." * * * "I have learned by an extra difficult case, aided by your kind advice, how to succeed with what I now know to be by far the best operation for deflection I have ever tried."

The operation referred to above is, briefly, as follows: After thorough cocaineization, the obstructed naris is displayed by means of the writer's self-retaining speculum, which has the advantage over most others that it is in most noses absolutely self-retaining, and the operator is not embarrassed by having it fall upon the floor from time to time during the operation. A straight Bosworth saw is introduced into the naris, and, being held perfectly parallel to the septum, a saw-cut is made upward at a slight angle through the septum so that the deviation, be it great or small, is surrounded by a U-shaped incision that entirely, except above, surrounds the deviation and extends completely through the septum. The deviated portion of the septum now hangs down as a tongue-shaped flap, being supported only above. The deviated portion of the septum is now thrust through the hole in the septum, which it covers, by means of the finger-tip. A tube, or other support, is slipped into the formerly obstructed naris to guard against accidents, and the operation is complete.

The saw that I use for the operation is of the ordinary Bosworth pattern, except that the handle is straight, *i. e.*, has no nasal angle. The blades have become somewhat thin as the result of having been many times repolished and sharpened, as it is necessary to have the saw as sharp as possible in order to perform the operation quickly. It is necessary that the saw should be narrow in order to be able to work under obstruction that reach nearly to the floor of the nasal chamber, and thin, in order not to remove too much tissue in making the saw-cut.

The tongue-shaped flap is not only thrust through the hole in the septum, but the finger-tip, in doing this, should be carried well through the opening in the septum and upward in such a manner as to bend the upper portion of the flap at an acute angle. If the parts are bony the bone will be fractured with an audible snap. Under

these circumstances the resiliency of the septum is completely destroyed, and probably no support whatsoever will be required to retain the septum in the median line during the healing process, because fractured bone remains in the position in which the operator's finger left it. Out of the fourteen cases upon whom I have now operated, this happened in two; and although a tube was left in position over night and the next day, as a matter of form, it was after that time withdrawn, and not reinserted, the formerly obstructed nasal chamber being at all times since the operation somewhat the wider of the two. In cases, therefore, in which much of the bony part of the septum is involved, the operator should be on his guard lest he make the formerly obstructed naris too large, for there is little if any tendency for the former deflection to reproduce itself, and the septum will probably remain exactly in the position in which it is left at the conclusion of the operation.

When the upper portion of the flap consists entirely of cartilage it is very difficult to fracture it and to completely destroy its resiliency. Generally, however, at least the posterior edge of the flap is bony and can be fractured, and if the cartilage be bent at a sharp angle its resiliency will be lessened; but such cases will require some support during the healing process and a tube should be worn for some time afterward.

If the saw, while cutting upward, is not held perfect parallel to the septum, it will readily be seen that the saw-cut will pass through the posterior portion of the deflection rather than around it. Under such circumstances, when the tongue-shaped flap is thrust through the hole in the septum, the posterior edge of this opening will project into the obstructed naris as a sharp ridge. Before withdrawing the finger from the obstructed naris it should be carried well back beyond the posterior border of the saw-cut in order to detect such a ridge if it be present. If found, it should be fractured or dislocated and the parts brought into the median line. Ordinarily, this can readily be done with the finger-tip, but it is well to be always provided at such operations with a pair of Adams' septal forceps to be used if necessary. The writer remembers to have only had occasion to use this instrument on two occasions; all of the fracturing and dislocating of the parts that appeared necessary having been readily accomplished with the finger-tip, and the number of his operations for deflected septum, by various methods, must have numbered at least 150.

When the deflected septum has formed an adhesion to the lateral wall of the naris, it will be found impossible to thrust the tongue-shaped flap through the hole in the septum with the finger-tip until

the synechia has been divided. This should be done with a pair of stout scissors, the saw or some other suitable instrument. But one of my fourteen cases presented a complication of this character.

It will be noticed that in sawing upward around the deflection that an opening will be made in the septum whose edges are necessarily beveled, especially below, toward the obstructed naris, so that when the tongue-shaped flap is thrust through this opening the larger side of the flap will be brought into contact with the smaller side of the opening in the septum, and to a certain extent be prevented from returning into its original position. As the result of my earlier operations, I was led into the error of supposing that this beveling of the edges would be sufficient in the majority of cases of rendering all the support to the flap in its new position that was necessary. It will be noted also that when the flap is thrust through the hole in the septum that the surfaces of mucous membrane are brought into contact about the opening, and theoretically, at least, they should not unite. As a matter of fact, however, they will do so, probably because the epithelium quickly exfoliates from the inflamed surfaces in contact with each other; after which they unite. Anyone who has had much to do with the treatment of nasal synechia will understand how readily this might take place. In my first operations, I was very careful to denude perfectly the surfaces that were to come into contact with each other, but in my more recent ones I have not been so careful, and the result, invariably, has been perfect union. The edge of the opening in the septum, and that of the tongue-shaped flap, may be readily denuded by thrusting the mucous membrane aside with the saw-tip at the time of the operation, or it may be removed at a subsequent period with Politzer's small, sharp ring curette, found in most cases of ear instruments.

The saw-cut through the septum, ordinarily, occasions somewhat free hemorrhage which, however, generally ceases as soon as the flap is thrust through the opening in the septum and the tube introduced. In one of my cases this did not take place and blood continued to flow freely from the formerly obstructed naris. The hemorrhage ceased quickly upon the introduction of a plug of cotton saturated with peroxide of hydrogen. This is a most efficient method of controlling nasal hemorrhage from any cause, and is extremely useful because of the quickness with which the necessary maneuvers can be executed. A mass of absorbent cotton, sufficiently large to completely fill the nasal chamber, and extend from the anterior to the posterior naris, is wrapped loosely about a probe and carried, dripping with peroxide, into the bleeding naris. As soon as the cotton

is in position, the probe is quickly withdrawn and the finger pressed against the plug to prevent its being forced out by the liberated gases. In a moment or two the pressure of the finger may be replaced by absorbent cotton, packed into the anterior naris in such a manner as to hold the first plug in position. The effect, in some cases, is almost magical, hemorrhage ceasing at once. The manner in which the peroxide acts may be demonstrated by adding a small quantity to some blood in a bowl. At once a clot is formed which occupies many times the space of the original bulk of the blood. If necessary, both nares could be packed in this manner almost instantly, but ordinarily the pressure of the tube is sufficient, if the bleeding does not quickly cease spontaneously, as it generally does, after the introduction of the finger.

Many of the cases operated on will require a certain amount of support within the formerly obstructed naris during the healing process. In two of my cases this was given by means of a steel pin thrust through the septum from in front and retained in position for ten days. In one, the support was by means of a little mass of iodoform gauze placed in the position where it would yield the best results, and at the same time enable the patient to breathe around it. The presence of any substance, no matter how soft, which is large enough to completely obstruct the breathing through that side of the nose, becomes almost intolerable within a few days. As already mentioned, in two of my cases, any form of support was entirely unnecessary and practically not employed. As a means of support after the operation, my decided preference is for the tube invented by Harrison Allen, of this city. It is made of plated brass and is not perforated, is oval in shape and about 2 inches in length, so that it extends, when inserted within the nose, from the anterior to the posterior naris. The proximal extremity of the tube is slightly larger than the rest in its vertical diameter, and bent downward to correspond to the shape of the vestibule of the nose. The operation, under any circumstances, should be done in such a manner as to allow this tube to be simply dropped into the formerly obstructed nasal chamber. If any force whatsoever is required to insert it, the operation has not been properly done and the finger should be reinserted into the naris and the obstruction removed, for the tube is not designed to force the parts into a normal position and retain them there, but simply to yield a little gentle support during the healing process and prevent the parts already in position from being displaced. It is best to allow the tube to remain in position for the first forty-eight hours after the operation, spraying an alkaline solution through it in order to keep

it free from mucous. At the end of that time the tube should be removed and cleansed each day and the condition of the septum inspected. At the end of a week or ten days the patient can ordinarily remove the tube from his nose and replace it, and, if he comes from a distance to have the operation performed, may be allowed to return home after being instructed in the manner of cleansing his nose with an atomizer containing an alkaline solution, and the use of an atomizer containing aboline, in each ounce of which is dissolved 2 grains of menthol and 10 of camphor. It will, however, probably be safest for him to wear the tube constantly for a week or ten days, except when it is being cleansed, and for half an hour each day for about a month longer, at the end of which time any danger of the septum returning, even partly into its old position, will probably have entirely disappeared.

In only two of my fourteen cases, I think, was it necessary, three or four months after the operation, to remove with the saw a small mass of cartilage produced by the overlapping of the flap in the formerly unobstructed nasal chamber. In these cases the amount of the redundancy of the septum was very great. It will be noticed that no matter how great the redundancy of the septum be, this manner of operating provides for it, both in a vertical and in an anterior-posterior direction.

Chronic Suppuration of the Maxillary Antrum. B. J. Baron, M.B., Edin. (*Bristol Medico Chirurgical Journal*, March, 1897.)

Purulent discharge from the nose is a usual symptom accompanying this disease. Neuralgic pains are also present. Some of the characteristic symptoms mentioned are (1) unilateral discharge, except in double-sided antral empyema. (2) It is pus unmixed with mucous, and is commonly of canary-yellow color and quite opaque. (3) It is intermittent in its flow from the nostril, usually most marked during the morning hours. When pus is seen flowing from above as well as below the middle turbinated body, disease of the anterior ethmoidal cells complicates the antral suppuration. Cleavage of the middle turbinated body is also seen with antral movement. Polypi are quite common under such conditions.

Transillumination is considered a serviceable method for arriving at a diagnosis. The author employs the Lichtwitz trochar and cannula as an exploratory measure, and is well satisfied with his results by employing the time-honored practice of drilling through the alveolar border, or above it, as the subsequent treatment.

M. D. L.

THE RELATIONS OF NASAL TO MENTAL DISEASE.*

BY DR. D. ZIEM, DANZIG, GERMANY.

The relations of nasal to mental diseases have scarcely received their due consideration in medical literature. The subject in question refers not only to suppuration of the nose and its accessory cavities, with consequent invasion of meninges and brain due to contiguity of tissue, but also to disturbances of circulation arising from diseases of the nose; also to lesions within the cranium. Here, too, we may include epilepsy accompanying nasal diseases, transitory delirium following intra-nasal operations, "aprossexia," so-called, and disturbances of memory occurring in the course of nasal lesions (see Prof. Guy's communication); likewise central troubles, with scent impairment, as Anosmia, Parosmia, etc. Here, also, we may classify certain irregularities in skull development, as in asymmetrical and turret-shaped malformations, clinically and experimentally observed in the course of chronic nasal obstruction.

Permit me to contribute some reflections and personal experiences in reference to disorders of the mind following nasal diseases:

In November, 1883, an accident occurred to me while undergoing an operation for empyema of the antrum of Highmore; a fragment of the sharp spoon-curette used was broken off and remained in the cavity. This accident was followed by copious salivation, and with so much congestion in the nasal chambers that respiration through these passages became an impossibility. Sleep could be induced only by large quantities of alcohol. Fever then developed, irregular action of the heart, violent frontal headache, vertigo and great prostration. A swelling appeared near the inner angle of the right eye, but disappeared spontaneously, leaving great irritability of the eye. I was confined to bed, was somnolent, and suffered from the most confused and frightful dreams.

Feb. 18, 1884, the fragment of the curette was removed, and thirty-six hours afterwards, while in a somnolent state, I was conveyed to an asylum for lunatics at Hamburg, the symptoms having become so violent that my attending physician thought

*Read before the Southern Section of the American Laryngological, Rhinological and Otological Society, New Orleans, March 3, 1897.

me insane. This action was taken against my wishes and the remonstrance of my wife. Many of our prominent authors on psychology have dwelt upon the great damage often arising:

I. From deluding patients in order to more easily transport them to an insane asylum, a too frequent and improper occurrence, and often dangerous to the mental equilibrium of the patient.

II. From confining patients with acute disorders of the mind in a common mad-house, on account of the inadequate attention, and the entire change of environments.

I think that no physician is justified in assigning a person, requiring his special attention, to a lunatic asylum, for such affections as erysipelas, meningitis, typhus or similar affections, associated with acute mental diseases.

My general health declined rapidly, because: (1) The suppuration of my antrum was left entirely to nature's resources. (2) I was denied the privilege of seeing my relatives for weeks at a time. (3) My surroundings, with the noises usual to an insane asylum, such as the incessant tramp, tramp of some of the patients, and the groaning of others in the room adjoining mine, and the constant watch, day and night, by attendants, who by the rattling of keys while changing watches, and the glaring light of a bright lamp in my room, deprived me of much needed rest. I suffered from hallucinations during my sleep, and, I believe, during the third night after my confinement, I became violently insane. The suppuration in the antrum gradually diminished, and I recovered the use of my mental faculties, and was soon able to take exercise, with an attendant, within the pleasure grounds of the asylum. Still, the fact that I was confined against my will preyed upon my mind, and the officials finally yielded to my solicitations and I was transferred to the private institution of Dr. Jessen, at Kiel. Here I was allowed to wander, midst beautiful surroundings, in company of Dr. Jessen or members of my family. At the end of a month I was declared entirely recovered and again fit for the practice of medicine, although at Hamburg I had been proscribed forever from all possibility of recovering my health, and my case diagnosed as softening of the brain.

Owing to the existence of a law at Hamburg that a physician, having had even a slight or transitory mental aberration, requiring another physician's tutorage for at least a year's time, was debarred from practice. I removed to Danzig, but even here I was not allowed to practice for some time.

Zollingbroke's saying: "Resignation is true magnanimity," is a fine one, but not always easily complied with.

In the summer of 1895 I treated a great many cases of purulent ear, nose and throat diseases, and I again suffered from suppuration of the nose. I drilled into the antra, and found both filled with purulent secretion. The right side yielded readily to local and constitutional treatment, but the left side became more aggravated, the suppuration became more profuse and fetid, the nasal mucosa swelled to the point of causing dyspnoea, especially at night, swelling below the eyelid, and pains in the eye. While examining my mouth with the mirror, I found a small black spot on the masticating surface of my only remaining molar tooth, which had been filled twenty-two years previously by a dentist at Frankfurt. I requested a dentist to remove this tooth, but he refused, as he did not think that the tooth had anything to do with the causation of the purulent discharge: I now had to give up my practice and was confined to bed, and only obtained relief by the use of sudorifics, such as the drinking of large quantities of sour lemonade, and by enveloping my body in woollens. I again became stupefied and somnolent, and found it difficult to concentrate my thought on any subject. I knew that my mind was becoming affected, as in 1884, and fully determined upon having the tooth extracted, as I was certain that it was greatly to blame for my unfortunate condition.

The tooth was found to be badly affected, was foul-smelling, one of its roots showed signs of periostitis, and had a shell-like, osteophitical excrescence. The suppuration gradually decreased. The alarming, meningitis-like symptoms, together with the pain in my eye and the swelling of my cheek also subsided and ceased after a few days.

I shall not encroach further by relating observations of similar cases collected in my practice, or from compilation from rhinological or psychiatric literature, but I desire to call your attention to a practical and very important point, viz., the occurrence of alarming cerebral symptoms, not only in affections of the ethmoidal, sphenoidal or frontal sinuses, but also in those of the antrum of Highmore. Maxillary empyema should be definitely excluded before operative procedures on any of the neighboring sinuses, especially the frontal, is undertaken. Permit me to add here a number of observations on the etiology of mental affections in their relationship to nasal diseases in general, and of my personal case in particular.

I. Direct extension of inflammation to the meninges along the vessels and nerves passing through the bones has been proven by Ortmann's post-mortem examination of a case of meningitis following suppuration of the sphenoidal sinus. Inflammations extending

through the posterior wall of the sphenoidal sinus may occur without the presence of any symptoms of mental disease; inflammation extending through the roof of the sphenoidal sinus is frequently accompanied by symptoms of mental disease, and inflammation of the ethmoidal or frontal sinuses proceeding to the brain is generally accompanied by symptoms of mental disease. If psychical troubles are observed as an accompaniment of inflammation of the antrum of Highmore, together with empyema, and these disappear at the same time, we are justified in the assertion that the mental symptoms are dependent upon the antral lesions. To substantiate this assertion I cite, first, B. Fraenkel's recently published observations on self-healing ethmoiditis after extraction of a molar tooth, which had also provoked maxillary empyema; second, my own case, already detailed, wherein the then existing slanting double meninges would seem to indicate a previous ethmoiditis, and, furthermore, only by the extraction of the fragment of the curette was the development of a fatal meningitis prevented. In reference to my comparatively quick recovery, both in 1884 and 1895, I believe that the meningeal disturbance was entirely functional and not anatomical in character.

II. Swelling of the nasal mucous membrane, accompanying maxillary empyema, will surely occasion, as previously cited by myself and others, a diminution of respiratory power, thus producing circulatory disturbance and stagnation in the venous and lymphatic vessels, not only in neighboring areas, as in the eyes and ears, but also in the cranium. The question is whether the trouble in lymphatic vessels is more important than in venous ones. As for the so-called meningitis serosa, it could in itself be produced by great swelling of the nasal mucosa in spite of any anatomical proof (in man, to the contrary, of communicating vessels existing between lymphatic ducts of the brain and those of the olfactory nerves. Key, Retzius and others have conducted their experiments in this direction thus far only on animals; we are thus fairly justified in concluding that a similar anatomical relationship of these communicating vessels exist as well in man as in animals.

According to Von Gerlach, there is considerable difference between the examination of animal preparations in a fresh state, with perfectly preserved permeability of lymph ducts on the one hand, and injected human cadavers on the other. Girard cites a case of long-standing hydrocephalus, where the patient was cured by the discharge of a considerable quantity of cerebro-spinal fluid from the nose, thus indicating the importance of proper rhinological attention in this class of diseases, and also proving that proper rhinological treatment

is, perhaps, more effectual than the present fashionable lumbar puncture, a measure so frequently, and often carelessly, applied for the relief of symptoms of simple headache.

Of still greater import is the question of the existence of accumulated fluids in the so-called cavities of the brain, under normal conditions, in the absence of any absolute proofs. Let me insist on two factors in this consideration:

1st. On dissecting human cadavers, the ventricles of the brain are frequently found quite free of any fluid; in W. Braune's excellent standard drawings of frozen sections of the head, the walls of the ventricles lie close together. 2d. The ventricles are always free of fluid in sound animals, such as cats, rabbits pigeons, hens, ducks, turkeys, etc. To substantiate these observations, the former are killed by strangulation, the latter by compression of the throat and decapitation; the heads, as previously recommended by me, are, while quite fresh, split by means of knife and hammer. I am disposed to agree with Adamkiewicz and other authors, that accumulations of fluid found in the ventricles of the brain in such animals, are not to be considered as a normal condition, but rather the result of impairment of circulation. This conclusion is reached in considering the stasis of a venous character, influenced by the condition of the choroid plexus.

Here, also, I would state, that the evidences deduced from a study of the human cadaver (as demonstrated by the vascular tunic of the eye), where considerable quantity of blood from the brain has been lost, or where there has been an emersion, for months or years in alcohol, are decidedly inaccurate and unreliable.

III. Besides lymphatic and venous stasis, there is a certain auto-intoxication arising both from fetid exhalations from the nose and from the resorption of purulent material, which must be recognized in the consideration of mental diseases in their relation to nasal affections. Wagner, of Vienna, has recently published observations of mental derangements, the result of auto-intoxication occurring in the course of affections of the stomach or bowels. The resorbing power of the nasal mucosa, and the consequent mental stimulus, has been the origin of a number of peculiar practices.

Snuff-taking while in the field and amidst the roar of the cannon was frequently indulged in by many great generals, as Von Moltke, Frederick II., Prince Eugene and others.

Niopo or Curuga powder, prepared in a peculiar manner, from a mimosa-like plant, as reported by La Condamine and Humboldt, is applied by the savages of the Orinoco to the nasal mucosa as a mental excitant.

In the Chronicles of Josephus we note that in the age of King Solomon, 1000 B. C., madness was cured by applying a certain narcotic root called Mandragora (?) to the nasal mucosa of mentally deranged persons.

These, as well as many other analogous cases, indicate that the reaction of certain substances applied to the nasal mucosa is apparent, and we may also infer that the brain may be influenced by foul-smelling suppurations of the nose or the sinuses. It is possible, too, that certain hallucinations, presumably due to disorders of the stomach or blood, may, in reality, be caused by an existing nasal suppuration.

IV. The question of direct absorption of oxygen gas by the central nervous tissues, by intimate connection with the olfactory bulbs, may also be cited. The publication of a series of experiments by Johann Ranke brought this subject to the notice of prominent physiologists. The exceedingly great development of the nasal, and especially of the frontal sinuses in some mammalia adds to the importance of this idea. Of this class, the elephant is a prominent example. Many birds also have an unusually sensitive and large nasal development, where the vast air-spaces extend forward to the extremity of the beak and backward within the basilar bone, approaching the medulla oblongata. This, then, might constitute the basis for a constant aeration of the central organ through the nasal channels.

From this series of considerations, then, first, by direct extension of inflammation to brain due to contiguity of tissues; second, by lymphatic and venous stasis; third, by auto-intoxication, and fourth, by prevention of proper nasal aeration, we are justified in our conclusions that mental derangements can be called forth in the course of nasal affections.

Uncommon Nasal Paræsthetic Neurosis. Dr. Sayers. (*Medical Record*, May, 1897.)

Attacks of periodical flushings over the end of the nose, together with a sense of burning in the integument of the end of the nose, or over the entire cartilaginous portion, has been observed in a neurotic female, married, twenty-three years of age. General restlessness and mental depression accompany the local symptoms. No cause was discovered. Various methods have been employed without permanent relief. (Turbinated engorgement frequently gives rise to a similar train of symptoms. Vasomotor periodica at times offers the same picture. Local disease should be suspected.)

M. D. L.

HYPERTROPHIC RHINITIS.*

W. T. GROVE, M.D., EUREKA, KAS.

When requested to read a paper before this Society I was prompted to prepare a paper on the above subject for two reasons, viz.: because I have been a long sufferer myself, dating back to my earliest recollections, and because I have had more experience in treating this malady than any other chronic type.

Hypertrophic Rhinitis is an inflammatory condition of the nasal mucous membrane characterized by hypertrophy and chronicity.

PATHOLOGY.

The direct causes have not as yet been satisfactorily demonstrated by our best pathologists; perhaps because its course is so variable in different patients.

We have a marked vaso-motor disturbance, defective nerve nutrition. The greater number of cases are dependent upon central causes, the condition lying in the vaso-motor system. Such patients are nervous and have tendencies to cardiac irritabilities, and especially to circulatory disturbances, such as cold feet and cold hands. Especially is this true in the later winter and earlier spring months when the air is damp and penetrating. Changeable, and particularly cold and moist atmosphere, is inductive as casual factors.

During the months of July and August, when heat is intense, patients are very apt to lie in night drafts for comfort sake, and thereby induce additional cold, and add another link to the already long pathological chain.

Heredity is an unquestioned influence, and all the hereditary influences which are handed down from generation to generation. Gouty and lithæmic diathesis are not to be overlooked as inductive influences. This class of patients is very prone to catch cold.

Nasal obstructions of all kinds, including spurs, polypi, deflected septi, rhinoliths, mal-formations, exostoses, traumatic injuries, no matter at what age or hour received, are potent-bearing and inducing influences. Nasal bones, when once broken by violent means, are hard to get re-adjusted correctly. Many times nothing is done, save

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shaping the nose a little, and sometimes the best skill fails to readjust. Naso-pharyngeal obstructions are direct causes, no matter of what kind, adenoids, polypi, including other classes of tumors. I have with me a specimen naso-pharyngeal polypus which I removed nearly two years ago with Bosworth's cold snare, kindly assisted by Dr. Dillon, of Eureka. The removal of this, and some cauterizations, partly trichloracetic and partly galvano-cautery, seemed to give the patient satisfactory relief. It has been stated as a pathological fact "that many nasal inflammations commence during the intra-uterine life." In the first stage we have a dilation of the venous sinuses, or a vaso-motor paresis. The vessel always seemed to be relaxed, resulting in hypertrophy of turbinated bodies and surrounding tissue of various degrees, even to complete stenosis of one or both nostrils.

A clot of blood is usually present in the dilated sinuses, and an out-pouring of leucocytes, with a tendency to fibro-blastic organization of the same into new connective tissue.

The second stage is a sclerosis. Both stages may be present in the same individual; the first stage in one nostril and the second stage in the other. In the sclerotic stage the turbinated bodies are more or less dense, and hard obliteration of the vascular sinuses occurs at times in the new pathological change, as a result of contraction, thrombi, etc. The nutrient blood vessels are often in turn destroyed, thereby inducing causes of atrophic rhinitis.

SYMPTOMS.

We first have nasal obstructions; respiration through one or both nostrils is seldom, if ever, free; complete occlusion through both nostrils is very common. The voice becomes nasal, or as people sometimes say, "They talk through their nose." Under such circumstances mouth-breathing becomes established, and when of long standing it keeps the fauces dry and more or less irritated. The patient becomes sleepy and dull, and the air that should have been moistened, warmed and strained, has been devoid of either physiological function and induces pharyngo-laryngeal complications. At first the discharge is watery and profuse, more so on cold, windy mornings, especially when facing the wind. But after long standing it becomes tenacious and tough, and frequently lumpy and scabby. The above symptoms are very annoying to the patient. It is all the more so when it drains posteriorly and has to be hocked out. Too severe hawking is also injurious to the walls of the naso-pharynx and fauces. Stenosis is not nearly so common in the sclerotic stage. The sense of smell is often blunted, the sense of taste impaired. Chronic

pharyngitis, laryngitis, trachitis and bronchitis are direct symptoms of these nasal diseases. Eustachian and middle-ear complications are frequent accompaniments. Diseased glossal glands are many times complications.

TREATMENT.

The scientific way to treat this malady is like the treatment of other conditions, viz.: To treat the causes, and the effects will follow. We have to treat the conditions in each individual case as they come up. If the so-called Luschka's tonsil is enlarged it should be reduced. If we have anything like permanent or stationary hypertrophied turbinates, they should be reduced. If any exostosis, cartilaginous growths, polypi, mal-formed turbinated bones, or any other movable obstructions are present, they should be gotten rid of as scientifically and skillfully as possible. In the young child we are able to remove adenoids with our finger nails, but I think a semi-anæsthetic stage, under chloroform, with a good assistant and use of a curette, is a much more scientific method, as recommended by Dr. Hal Foster in a recent article. The removal of spurs, exostosis, mal-formed turbinated bones can be well accomplished by the use of the knife and saw. The amount of cauterization to the turbinates or other hypertrophies is a matter of vital importance. Too much tissue must not be destroyed, for two reasons: First, The physiological functions will be interfered with. Second, Too much cauterization is inducive to atrophic rhinitis, a worse condition than the one we wish to eradicate. The tendency now advanced by our most scientific writers is not to cauterize too much. The matter of cauterization is one of choice.

Any of the various caustic acids can be used, viz.: Nitric, tri-chloracetic or chromic acids, or the galvano-cautery. I prefer the galvano-cautery to any of the caustic acids, whenever it is possible to use it, for several reasons: you can better limit your amount of destruction; it is clean, aseptic, scientific and impressive to the patient. Of course, it is possibly necessary to combine both methods, in many cases, being more convenient to use the acid method than the galvano-cautery. The galvano-cautery is certainly to be preferred when cauterizing glands at base of tongue, and posterior pharyngo-nasal cauterizations. An acid application may drop on a place where it is not wanted. The frequency of cauterizations depend: first, upon the degree of hypertrophy of the case; second, how much is cauterized at any one sitting, and how well the case gets along after being cauterized. Ordinarily, once in a week or two, or even oftener, if but a very small surface is cauterized at any one time. Frequently we can cauterize one side at a time, and in a day or two the other

side, and so on. We should avoid cauterization by any means or method during an acute attack of rhinitis, because we have an inflammatory condition with which to start. Second, we have an exaggerated hypertrophied condition, plus our chronic condition. The matter of spraying is of paramount importance. Various modifications of Dobell's solution used as a spray. Solutions of antipyrine, varying from ten to thirty grains to the ounce of sterilized water, especially where we desire a shrinking effect of the tissues. These alkaline solutions are preferred after cauterizations. Menthol, gum camphor, with the various oils, such as eucalyptus and gaultheria in liquid alboline as a base; these can be combined as seems best to suit each individual case. The oily sprays are best after the acute inflammation has subsided, unless they be rather mild, in which cases they can be used subsequent to cauterizations. Aristol salve, ten to twenty grains to the drachm of vaseline, is also a nice preparation after operating, to apply to the nasal and mucous membrane. Protoneuclin powder, applied immediately after operation, certainly arrests, to a great degree, inflammation. Local applications of various alterative drugs, modified in strength to suit each individual case, such as iodine, tannin, glycerine, iodide of potassium, creosote, tincture of chloride of iron, are among the most important to be used. Weak solutions of the chloride of zinc and nitrate of silver are exceedingly useful where we desire a stimulating effect. Local galvanism is no doubt beneficial in many cases to the turbinates. This I have never practiced. For local anæsthesia I have always used cocaine hydrochlorate. Constitutional treatment is required in the majority of all cases, and is of paramount importance. The practice of medicine, no matter in what branch, is purely an art—not a science. Every patient is a law unto himself, and we must inquire into his habits of dress, eating, exposure, occupation, etc., and bring each individual case to an observance of a strict hygienic rôle. Many times, by the correction of some bad habit, we are able to be successful, when we would otherwise fail.

The successful doctor must be "Monarch of all he surveys." This is gradually, day by day, given him by ardent study, observation and real meditation. Of course, reading thoughtfully is good exercise, but careful and deep meditation over cases from time to time, mingled with advices from authors, either written or verbal, are indispensable to any man's success.

THROAT MANIFESTATIONS OF TRANSMITTED SYPHILIS.*

BY DR. W. W. WHITAKER, COLUMBUS, O.

When a child is born of syphilitic parents it should at once become an object of especial interest to the physician, who, with systematical regularity, should inspect it with the hope of anticipating or discovering the very first lesion of the disease. Careful attention and supervision should be continued until puberty has been attained. Remembering the cell instability of childhood and the glandular irritability usually present during any infectious reaction, it is, indeed, no wonder that the mucous membrane and lymphatics of the throat become infiltrated early and assume an active part in the subsequent history of the disease.

Physicians, seemingly, are prone to overlook lymphatic glandular irritability and consider it a feature of the life of the child rather than one of pathological importance. It is to the integrity and healthfulness of the lymphatic system that we look for the proper nutrition, growth and subsequent development of the child. What can derange its functions in any way causes a lesion of nutrition.

The naso-pharyngeal mucous membrane is ever ready to become hyperæmic, and it responds more or less quickly to a variety of infections, such as we see, for example, in whooping cough, measles, etc. The fauces in primary syphilis presents a characteristic redness which is but a local expression of the systemic infection. In hereditary syphilis the same conditions obtain, but they are less active. The mucous membrane in the young, apparently, is predisposed to congestion and receives infection quickly. The lymphatics bearing the infectious agents are stimulated and the lymph follicles receive an increased quantity of blood and become active in proliferation. The lymphatic hyperplasia becomes more or less general and the mucous membrane is invaded. The normal histological elements of the muciparous glands are hypertrophied and there is an increased mucus flow. The parts being congested, there is an increased local temperature, which, together with the abnormal and abundant quantity of mucus, favors cell proliferation and degeneration.

*Original abstract of paper read by title before the Western Ophthalmological, Otolological, Laryngological and Rhinological Association, St. Louis, Mo., April 8, 1897.

When these conditions are established early in life we have the "lymphatic diathesis," to which we owe so much, for the many subsequent pathological conditions found in the throat.

Gummatous deposits occur in the lymphatic bodies about the muciparous glands in the fauces, under the soft parts. Owing to the liberal distribution of these bodies, extensive areas may be invaded before the process of softening begins, which, when once established, spreads rapidly and causes extensive destruction. Throat symptoms may be anticipated but seldom encountered until after the age of five years.

Fortunately, inherited laryngeal syphilis is not frequently encountered; but when it does come it is attended with grave conditions. In the very young the tendency to œdema, or laryngismus, may be brought into activity by exposure to cold or some other exciting influences, and the child's life be endangered. * * *

Stenosis of the larynx following ulceration is a very grave condition, for which treatment is not always satisfactory.

Recent strictures cause the least annoyance and respond better to treatment; while, on the contrary, slowly-forming strictures yield but imperfectly. Destruction of the epiglottis is not so dangerous a condition as might be supposed, because the pliable structures about the opening assume the compensatory function of a sphincter and prevents the introduction of food. Fibrinoplastic exudations may become organized as in primary laryngeal syphilis and produce dislocation and deformity of the cartilages. Likewise papillomatous degeneration is prone to supervene about the seat of ulceration in the larynx, or by a proliferation process invade the laryngeal space, encroach upon the vocal chords, and even ascend the air passage. * * * The loss of voice, pain and cough are features prominent in the history of the diseased larynx.

* * * * *

So many suggestive conditions are present in the syphilitic to arouse our suspicions that we should *not* be misled or mistaken in forming a diagnosis. Tuberculosis and syphilis are often confounded, and both may even be present in the same case. Syphilitic laryngitis is often diagnosed as one of tuberculosis when the two diseases are in the same throat, because the sputum contains bacilli.

The history of the child, its development, its susceptibilities and the leading symptoms are sufficient to assure the diagnosis. When doubt exists, tentative constitutional treatment will be of assistance in making the decision, and it should be employed. * * * The

"notched teeth" of Hutchinson have always been present in cases observed and there is no cause to question their significance as a diagnostic feature. * * *

In forming a *prognosis* a careful consideration is necessary, otherwise an unexpected calamity may be experienced in young children. The younger the child the more guarded should be the opinion. The small larynx of childhood, the tendency to œdema and laryngismus after exposure, should always be remembered and its importance explained.

Generally speaking, syphilitics respond kindly to treatment and few other diseases afford such possibilities for recovery. Occasionally, however, infected infants are so faulty in development and nutrition that they respond slowly and unsatisfactorily to whatever treatment is pursued, and they finally succumb. * * *

The care and attention given to syphilitic children is a matter of the greatest importance. The surroundings, whether housed in close, overheated, dark and poorly ventilated apartments, or is taken into the air and sunlight; the quantity and quality of nourishment, and the habit of bathing, are factors important in the consideration and management of the disease and deserves the constant attention of the physician. The child's digestion, too, is another feature too often overlooked. In many instances assimilation is imperfect, because of faulty digestion. To obtain adequate nutrition, sufficient for the requirements of normal growth and development, it is imperative that we have digestion as active and healthy as possible. To assist this and aid the assimilative functions, it is desirable to administer some of the prepared digestive ferments. Further benefits may be obtained by the use of predigested foods when occasion demands.

It should be the constant endeavor of the medical attendant to keep the bodily functions in an active condition, and see also that the secretions are maintained to a degree of proficiency.

Syphilitics usually bear mercurials well, and certainly there is no remedy at our command that is its equivalent or can take its place in the management of this disease. No other pathological condition will give way so truly to medication as does syphilis to full, regular and continuous doses of mercury. Especially the curative properties of mercury will be enhanced, and noticeable if administered with iron. Indeed, personally, iron has long been considered a factor quite as important for the cure of this disease as mercury, and in the treatment of the original infection it is my custom to give it generously and continue as long as mercury is used.

Thus employed, the usual "syphilitic pallor" is prevented and

nutrition better maintained. The digestion is not so frequently deranged and rarely is there salivation. With a liberal supply of iron it is the usual experience to find syphilitics weighing more and in a better general condition at the conclusion of the course of treatment than when it was commenced.

Cod liver oil, a remedy too often overlooked and frequently wrongly administered, deserves a better estimate than it receives in the treatment of diseases of young life. It is a food particularly rich and peculiarly happy in the deranged nutrition and delayed development which so frequently accompanies transmitted syphilis.

To attain its best results, however, it has been found necessary to depart from the usual and accepted methods of administration recommended by authorities. Given after meals, the oil fails to be properly emulsified by the pancreatic juices, and, as a consequence, only a portion is absorbed and a greater part remains in the digestive canal to cause disturbance which compels that the remedy be suspended.

Administered before meals, and in smaller doses, it meets the pancreatic juices alone, when a better emulsion is formed and absorption is complete; so that we really receive a greater nutritive return value for a smaller quantity of the oil.

To assist the pancreatic action, we find the oil may be administered with the isolated pancreatic ferments, which gives us a food of high standard nutritive value that is practically ready for absorption, and one that does not derange delicate stomachs which accept it and retain it without nausea.

The alkaline iodides retain the confidence of the profession and should be administered in the latter developments of the disease, and administered in increasing doses. They may be given singly, or in combination with mercurial preparations according to established methods and known as "the mixed treatment." Belladonna may be combined with them when the mucous membranes exhibit evidences of too much irritation. * * *

Local treatment, in children, is not always possible, because of fear. Rebellious, improperly governed children offer the greatest resistance, and oftentimes the physician is handicapped by an oversensitive, foolish mother, who insists on accompanying the patient and being present at each treatment.

The confidence of children can only be gained by a patient, kind and gentle manner, when this is once established, they are docile and tractable to a satisfactory degree.

As a rule, gargles, for throat ulcers, fall short of the purpose for which they are intended. It is easier to reach the parts involved, and to cleanse them, if sprays are used.

For this purpose the alkaline antiseptics, combined with an astringent, are desirable. An occasional application of hydrogen dioxide, diluted, secures a clean surface, to which it is desirable to make a secondary application—such as chromic or lactic acids, properly diluted.

A liberal and too frequent use of hydrogen dioxide is not to be encouraged, because of its tendency to produce irritation and congestion of the mucous membrane.

Laryngeal papillomatous growths are difficult and unsatisfactory to treat because of their situation. * * *

As to the length of time treatment should be continued in hereditary syphilis it would be difficult, indeed, to give a reliable or satisfactory estimate.

The treatment should be governed by the results obtained, and must be pursued as long as the child's growth, development and general health and condition requires.

If constitutional treatment is neglected and is not systematically continued from the very first appearance of the disease, and the child is not properly nourished, fed and hygienically cared for, nothing but disappointment can or will result.

As an adjuvant to any method of treatment, I take especial opportunity to refer to the benefits which may be attained by a course of baths at either Mount Clemens, in Michigan, or Hot Springs, in Arkansas.

The medical profession in the United States is particularly fortunate in having these two resorts at their command in assisting to combat the progress of syphilis.

Without debating the especial and respective merits of either of these two places, it is only necessary to appreciate their value as a curative agent upon all conditions of syphilis to dispel any skeptical assertions concerning their beneficial influence upon the course of the disease. Any stubborn case of syphilis that has not responded to treatment should be sent there and the results judged impartially.

Dr. Max Thorner, of Cincinnati, announces the removal of his office to 7th and Race Sts.

THE FUNCTIONS OF THE TENSOR TYMPANI AND STAPEDIUS MUSCLES AND INCIDENTALLY THE MECHANISM OF TINNITUS AURIUM.*

BY THOS. F. RUMBOLD, M.D., ST. LOUIS.

It is not possible to properly treat these two subjects in the length of paper to which this one must be curtailed.

WHAT RECOGNIZED AUTHORITIES SAY CONCERNING THE ACTION OF THESE MUSCLES.

I consider that Landois and Stirling (1892) are among the most reliable physiologists. They say on page 1015: "When the muscle (tensor tympani) contracts in the direction of the arrow (pointing in the direction of the promontory), then the handle of the malleus pulls the membrana tympani inward and tightens it. This also causes a movement of the incus and stapes, which must be pressed more deeply in the fenestra ovalis as already described." * * * "C. Ludwig and Politzer observed that stimulation of the fifth nerve within the cranium (dog) causes the above mentioned movements."

My Examinations by Callisections on Animals agree with these physiologists. * * * * *

I am very certain that the study of these organs by callisections and by clinical observations on human beings is far better than looking at pictures even in our best text books. It is only during life that these functions can be repeatedly demonstrated. This I accidentally found to be so while studying the mechanism of tinnitus aurium.

ONE KIND OF TINNITUS AURIUM SEEMS TO DEMONSTRATE THE FUNCTIONS OF THESE MUSCLES.

In order to be able to present my views distinctly I shall be compelled to refer, at some length, to the mechanism of tinnitus aurium, for it was the fact that one peculiar kind of ear-sound was maintained without variance, except as to severity, for many years, that led me to the conclusion as to the functions of the middle ear muscles.

*Abstract of paper read before the Western Ophthalmological, Otological, Laryngological and Rhinological Association, April 9, 1897.
For complete article, apply to the author, who will furnish reprint.

* * * In doing this I think that the functions of the tensor tympani and stapedius will be almost perfectly demonstrated.

WHAT IS SOUND ?

Before proceeding farther, this question should be clearly answered. Sound, formed *in* the ear or on the *outside* of it, is vibration of some kind of a body, which immediately affects the ear. * * *

* * * We perceive sound only because of the transmission of motion, made by sound-impulses, to the auditory nerve; these impulses produce the effect of what we call sound. "In tinnitus aurium we have a sound that is not produced by sound-waves in the air, yet this sound must and can only be produced by motion imparted to the liquid in the internal ear."*

CAN THERE BE SOUND WITHOUT MOTION ?

All works on physics say that we cannot have sound without motion. * * * I take it for granted that all will agree that we can have no sound, hallucinatory ones excepted, without motion.

IS THE SENSATION EXPERIENCED IN THE EAR A SOUND ?

Several recognized authorities agree that the ear-sounds have a real subjective existence. I do not say that all say this, but I think that it can be demonstrated that all ear-sounds are the result of motion. The fact that there is a uniformity in the positive statements made almost universally by ear-patients as to the kind of noise in their ears must be admitted as sufficient to prove that the noise in this organ is a *sound*. I have the record of patients, natives of North and South America, Great Britain, Europe, Asia, Russia, Japan, China, Australia, Sandwich Islands, New Zealand, etc., all insisting that the noise in their ears resembles familiar sounds heard only in their native countries. * * * These ear-patients who lived in different portions of the earth, when their ears became affected with ear-sounds, could *not* have any other kind of sound in their ears save the familiar sounds that each heard at the time he contracted his tinnitus aurium. Of course he may have the "hissing" sound also, but this last kind of ear-sound is almost exactly similar in kind in all persons of all nations. This kind of tinnitus is almost universally described as a hissing sound, whereas the other, the familiar ear-sound, is almost always peculiar to the locality where the individual lived. This is an important fact that should be kept in mind, as it indicates, nearly always, the kind of tinnitus aurium that affects the patient.

*Extract from remarks made before the St. Louis Medical Society, October, 1873, and published in the author's work on "Hygiene and Treatment of the Diseases of the Nose, Throat and Ears," 1881, pages 348 and 349.

THE SUPPOSED CAUSE OF EAR SOUNDS.

During the spring of 1873, while preparing a course of private lectures for physicians on inflammatory diseases of the Nose, Throat and Ears, I was greatly perplexed, when I began to write of the cause of tinnitus aurium, to find one that would fit all cases.

At first I included a closure of the Eustachian tube, myringitis, inflammation of the middle ear and mastoid cells, etc. Then I called these ailments predisposing causes, and considered that they had an aggravating influence upon the labyrinthine inflammation, the real cause of the ear-sounds, as I then supposed. A more extended study into the histories of a large number of ear cases led me to abandon the idea of the inflammation of the labyrinth and call the cause a pressure upon the labyrinth through the stapes. The pressure idea was soon abandoned also; the theory of the hyperesthesia of the auditory nerve or other contents of the labyrinth was the next conclusion.

The hyperesthesia idea was not held more than three or four months, as I found that I was taking it for granted that tinnitus aurium was as inherent to a diseased ear as pus was to an abscess cavity. Besides this, I was presuming that sound was produced *in* the subject's ear by a different mode than it was produced *outside* of his ear. As extrinsic sounds are the result of vibrations, the intrinsic sounds must also have vibrations for their production, but how these vibrations were brought about I could not conceive.

* * * * *

At that time I had been engaged for about five years in a thorough investigation of the functions of the Eustachian tube, and had noticed that in patency of this canal the patient's voice was transmitted to the ear through this abnormally open passage. In two instances the peculiar tone of the voice started a tinnitus that lasted for several hours. In one patient every eructation from the stomach, that passed up the open Eustachian tube, started a very disagreeable tinnitus that lasted sometimes all day; this condition continued for months.

* * * * *

There is no way of avoiding the conclusion that the cause of sounds in the ear must be traced to motion.

* * * * * An irregular caliber of the blood vessels can produce motion, so can a diseased condition of the middle ear muscles produce motion. As far as I know there are no other means of producing motion so that it will affect the auditory nerve.

In every work on ear diseases, in my possession—and they are all by prominent authors—it is easy to see that in certain cases the cause

of these abnormal sounds is evident upon dissection, and in certain other cases, one author says: "We must be content to admit our ignorance of the cause," for no evidence of disease in or about the ear could be detected by the closest examination.

It is seen that one kind of ear-sound has a truly *objective* existence, while there is another that does not show any objective symptoms. Close examination will prove this to be correct.

TWO KINDS OF EAR-SOUNDS.

If ear-sounds are carefully analyzed it will be found that there are two very distinct kinds. They differ in the character of the sound, in their etiology, in the location of their origin and in their mechanism. One kind is of vascular origin, which I have named "vascular tinnitus aurium," and the other kind of muscular origin, which I have named "muscular tinnitus aurium." This nomenclature will locate each sound, give its origin and, at the same time, describe the kind of sound meant.

THE DIFFERENTIATION OF THESE TWO EAR-SOUNDS ASSISTS TO PROVE THAT THERE ARE TWO VARIETIES OF TINNITUS AURIUM.

It has long been known that many persons, who are partially deaf and experience excessive noises in their ears, will hear a conversation in a moving railroad coach better than in a quiet room, showing plainly that extrinsic noises have a controlling influence upon the sound produced in their ears. This is positive proof that all such persons are afflicted with muscular tinnitus aurium, and it goes to show that the ear-muscles imitate sounds.

The sounds that are formed in the internal ear and in its neighborhood, that is, vascular tinnitus aurium, will not be decreased by any degree of force of extrinsic sounds of any kind. Of course, extrinsic sounds will have no modifying influence on diseased blood vessels. It cannot correct their abnormally dilated caliber, the cause of vascular tinnitus aurium.

It is seen that if any extrinsic noise will cause even the least amelioration of an ear-sound, then the patient is suffering from the muscular variety of tinnitus aurium. If extrinsic sounds do not thus relieve the ear-sounds, then the case is one of vascular tinnitus aurium. As far as I know this is invariable.

PATHOLOGICAL CONDITION OF VASCULAR TINNITUS AURIUM.

Mr. Jas. Hinton says, in Toynbee's work, 1868, that tinnitus aurium "is obviously referable to vascular conditions as its exciting cause." Again he says: "But in ascertaining the cause of tinnitus, it appears to me that the great frequency with which the enlarge-

ment and fullness of the blood vessels of the labyrinth are found on dissection to accompany even slight inflammatory affections of the middle ear should not be overlooked." Dr. Jas. Jago, in 1867, ascribes the ear-sound to an abnormal condition of the small arteries. It is certain that these two very careful observers have found the cause of one kind of ear-sounds.

I think that every careful examination of a diseased internal ear will show the excessive irregularities of the caliber of many of the blood vessels. * * * * * Every one who has listened to the thrill of an aneurism knows that the more sudden the enlargement of the vessel the coarser the noise made by the blood in its passage. Conversely, in very small blood vessels, the sound-impulses will be so rapid and fine as to resemble the escape of steam or the rush and roar of water, according to the proportionate size of the enlargement.

PATHOLOGICAL CONDITION OF MUSCULAR TINNITUS AURIUM.

This ear-sound is impressed upon the ear at a time when the middle-ear muscles are in a more or less abnormal condition. Very frequently this kind of ear-sound resembles some very familiar sound heard in the location of the patient's residence. It is almost universally observed that those living in one locality, as in a city, will complain of being troubled with a kind of sound that is peculiar to that locality, while those who live in a country location will complain of ear-sounds that are peculiar to that locality. This indicates that there is a very close relationship between the kind of sounds produced in different localities in which he lived and the sounds heard in the ear, and it shows plainly that the sounds heard in these localities have something to do in helping to produce similar sounds in the ear.

* * * * *

It seems altogether probable the sounds in their ears dated from a period at which they heard something that produced a similar sound—that produced a similar vibratory motion of the membrana tympani, or the stapes, or both, at a time when the tensor tympani or stapedius, or both, were in an abnormal condition, so that they reproduced the same vibratory motion after the originating sound ceased, this continuation being the muscular tinnitus aurium.

I have never had an American patient, who was afflicted with this kind of tinnitus, say that he had a noise unlike any sound he ever heard, say, for instance, the Japanese musical instrument, the Chinese Joss bells, the Irish "tea-kettle," etc. Very frequently, as already stated, there may be two or three more sounds in the ear at the

same time, that is, there may be a hissing or a rushing sound, occasioned by blood vessel vibrations within the labyrinth or in the neighborhood, while each of the other sounds will be some familiar sound; one he heard while his middle-ear muscles were in such a diseased condition that they contracted this kind of tinnitus aurium. * * *

THE CAUSE OF THE VIBRATIONS OF THE EAR MUSCLES.

Dr. T. Lauder Brunton, of London, in a very instructive article in *Brain*, July, 1878, on "Reflex Action as a Cause of Disease," says: "I have just mentioned one instance in which intermittent spasms (paralysis agitans) of a voluntary muscle, the orbicularis palpebra, was caused by irritation of the sensory nerve. This leads me to remark that a very important condition to be borne in mind is that constant stimulation of the sensory nerve will often produce clonic or intermittent, and not tonic or continuous contraction of the muscles which it may set in motion."

The contractions and relaxations that constitute a paralysis agitans of the orbicularis palpebra are very similar to the motion of the muscle or muscles in the middle-ear, both being caused by the same kind of diseased action, namely: irritation of a sensory nerve, the facial, or the fifth, or both. * * *

In the case of the familiar ear-sounds, for instance, the cricket sound, the function of the ear-muscles make themselves known by repeating the cricket sound after the extrinsic sound has ceased. These cricket sounds exactly suited the abnormal condition of the ear-muscles. Had the extrinsic sound not suited the abnormal condition of these muscles, the intrinsic sound would not have been experienced by the patient. * * * In the instance of the cricket sound, the ear-muscles must undergo irregular contractions so as to form a peculiar sound, a sound unlike any other sound, and is produced by contractions that are unlike any other set of contractions. The ability of these muscles to form familiar sounds is part of their function, that of imitation, as has been stated and will again be mentioned.

THE APPARENT INTELLIGENT ACTS OF THE MIDDLE-EAR MUSCLES.

Some one may say: It is altogether possible that a paralysis agitans can affect the muscles of the middle-ear, but this condition can only cause a simple succession of contractions and relaxations, which would only make a uniform sound, but to give these diseased ear-muscles an apparent intelligence of following and repeating day by day for several years a peculiar rotation of contractions and relaxations, so as to form a special sound, is past belief.

In answer to this simple negation I will say: There are actions of medicines, and reactions of various parts of the human system that are past belief, were we not overwhelmed with the great number of facts that say plainly that things are so, although we cannot comprehend their mode of action. * * * * *

In the normal ear as soon as the sound-impulses cease their blows upon the membrana tympani, the stimulation of these two muscles to imitate and amplify sounds cease also, but in the diseased state their abnormal condition constitutes their stimulus, so they continue their peculiar contractions and relaxations, that is, continue to imitate these sounds because they come nearest to their hyperæsthetic or abnormal condition, this imitation being the muscular tinnitus of the middle ear.

If the abnormal condition is such that no outside sounds are exactly suitable for continuous repetition, then the ear muscles may take on simple contractions and relaxations of a uniform character, as already stated, just making a uniform sound, such as ringing or singing or purring; the latter sound resembles a sound that the contractions of the orbicularis palpebra would make, or they may imitate the sound produced by vascular tinnitus aurium, thus forming a hissing or rushing sound. In these cases there may be no momentary increase of the sound from the heart's action, as is almost always the case in vascular tinnitus, especially if an artery is the affected vessel.

Clinical facts prove that muscular tinnitus aurium is maintained in the ear for many years, that is, the ear muscles have repeated familiar sounds for many years. This continuance for many years proves conclusively that it is the function of the middle-ear muscles to imitate sound.

A PREPARATION AND A START REQUIRED.

Of course, the ear muscles must be made ready by disease for paralysis agitans, or the muscular tinnitus, before the accidental sound starts them. After these muscles are prepared by disease they *must* have a start. How could the ear muscles take on the old saw-mill sound of "yow, yow, yow," unless the old mill started them? If that old mill had never made that "yow, yow" sound, that man never would have had that kind of tinnitus, that is self-evident.

These facts prove: First, that the ear muscles imitated the sounds formed by the mill-gate, and second, that they continued this kind of imitation for many years. It is not possible to have these familiar sounds repeated in the ear unless the middle-ear muscles imitated the extrinsic sounds and continued to repeat them for years. It follows,

as a necessary consequence, that if tinnitus aurium is an intrinsic sound the ear muscles must have imitated the extrinsic sound, there is no avoiding this conclusion.

The ear muscles could not have acquired the function of imitation because of their diseased condition; this condition causes them to contract and relax, as in paralysis agitans, but not to imitate. Nor can these muscles imitate a mill-gate, or a cricket, or a musical, or any sound that is not a uniform sound. These peculiar sounds must be given to the diseased ear to be repeated; if they are not given they will not be repeated. * * * The extrinsic sound and the tinnitus have a positive relationship the one to the other, and it is one of the faculties of the middle-ear muscles to imitate sound.

THE POSITION OF THE TENSOR TYMPANI AND THE STAPEDIUS INDICATE THAT I AM RIGHT.

The direction of the contractions of these ear-muscles is exactly in the same direction as that taken by the manubrium and the stapes when they are pushed inward by the sound-impulses. I ask, what is the purpose of the contraction of these muscles? Are they to *assist* the action of the sound-impulses, or are they to *resist* the action of the sound-impulses? The muscles are placed here to produce motion, and their action—be it noticed—is not to check the motion of the manubrium or the stapes when moved by sound-impulses, but quite the opposite; they assist the sound-impulses to increase the inward motion of these two bones. I ask particular attention to these facts.

The contraction of the tensor tympani increases the inward motion of the membrana tympani, and the contraction of the stapedius forces the base of the stapes farther into the internal ear, plainly showing that their action is in the direction of the sound-impulses. Also showing that *if they move at all* they must increase the motion made by the sound-impulses, which they are *required to do* if they play any part in amplifying sounds. In other words, if I had the placing of the middle-ear muscles so as to make them prove that my views are correct, I would place them just where nature has put them.

THE FUNCTION OF THE MIDDLE-EAR MUSCLES.

It has been my opinion for many years—although only partially expressed in my writings, because of a fear that I might be wrong—formed from close observations upon notes taken upon *several hundred* marked cases of tinnitus aurium of the middle ear, that * * * the function of these middle-ear muscles is to increase the sound-impulse motions of the small bones of the middle-ear. * * * *Of course, the amplification is entirely under the control of the mind.*

OUR EVERY-DAY EXPERIENCE PROVES THAT THESE MUSCLES
AMPLIFY SOUND.

There are many times when noises are being made around us that if heard with the utmost distinctness would distract our mind from a certain train of thought, or would prevent us from hearing a certain particular kind of sound. For instance, while intently reading a very interesting book, we do not hear with the utmost distinctness, even comparatively loud noises, as the roll of a carriage, the striking of a clock, the step of a person in the same room, and almost numberless other lesser sounds. Or when at an opera no noises are plainly heard, except the musical sounds, unless they are overpowering. But when these distracting noises are louder than are the musical sounds that are amplified by the ear muscles, we are annoyed because we are compelled to take cognizance of the distracting noises to the exclusion of the musical sound that the ear muscles have *vainly endeavored* to make the most prominent. Those who are listening to my voice do not hear other sounds around them nearly as plainly as they hear me. But if they turn their attention to those other sounds around them, they will hear them much more distinctly than before, and will hear my voice much less distinctly. At all times the action of these two muscles, in normal ears, prevents confusion, not by excluding certain sounds, for we do indistinctly hear them, but by amplifying the selected sounds we desire to hear, leaving the other sounds, that we do not desire to hear, unamplified. The reason why we weary of listening is because the middle-ear muscles tire in imitating and amplifying sounds. Without these selections, imitations and amplifications, all sounds would be equally heard to our great confusion. The confusion would be due to the fact of our inability to hear any one sound more distinctly than another, which can only result from a disabled condition of the middle-ear muscle or muscles. I have the histories of quite a number of patients—more or less deaf—who are thus disabled because their middle-ear muscles cannot select and amplify those special sounds that they desire most to hear. * * * * *

There should be no misunderstanding in regard to distinguishing the difference between the ability of selecting or choosing sounds and that of amplification or enlarging the sound-impulses. The ability to select or choose a sound for amplification is the employment of a mental faculty alone; it is a mental selection or choice. One may exercise this faculty, but still not have the muscular ability to perform the amplification. The ability to enlarge sound-impulses, that is, amplification, is performed by muscular action alone, of

course, only when mentally desired, and this mental desire is the selection. An individual who can amplify these sounds may think that the simple desire to select is the reason for hearing the desired sound more plainly, when really this plainness of hearing is due to muscular action, muscular amplification, muscular increase of the size of the sound-impulses, and is the result of the mental desire to hear the sounds. One could as correctly say that the selection or choice of an object to strike is synonymous with the muscular act of striking, when really the muscular act of striking is the result of the mental desire to strike. One may have the desire to strike but not have the ability, as one may desire to hear a certain conversation in a noisy room, but not have the ability to amplify the desired sounds. Go with that person into a quiet room, then he will hear nearly as well as other persons, because he does not require to amplify the sounds that he desires to hear, there being no other sounds to mix with the sounds that he desires to hear, therefore no confusion.

* * * * *

The relative positions of the middle-ear muscles to the bones they move, prove, as has already been stated, that they are placed there for the sole purpose of amplifying sound-impulses.

It seems to me that all these facts plainly indicate that the function of the middle-ear muscles is to amplify and to imitate sound if the person so desires, the proposition that I undertook to prove.

The Correction of Depressed and Saddle-backed Deformities of the Nose, Etc. (Dr. J. O. Roe, *Med. Record*, June 5, 1897.)

In a very interesting and illustrated paper upon this subject, the well-known author describes a number of ingenious operations. Photographs accompany the text, which illustrated the pleasant results obtained. The operations were performed subcutaneously without the aid of metallic or other artificial supports. In these cases the nasal septum was present, thereby affording support for the tissues that were transplanted for the correction of the deformity. The author remarks that these operations require frequent and careful attention, as the parts must not only be held in position by retentive appliances but the shape of the form of the dressing must often be changed from day to day as the swelling subsides and the union of parts takes place. Frequently the principal operation must be supplemented by minor ones for the correction of slight defects.

M. D. L.

INDICATIONS FOR PARACENTESIS OF THE MEMBRANA TYMPANI IN OTITIS MEDIA ACUTA.*

BY H. V. WÜRDEMAN, M.D., MILWAUKEE, WIS.

Ophthalmic and Aural Surgeon to the Children's Hospital; to the Milwaukee County Hospital for the Chronic Insane; Director to the Wisconsin General Hospital; Secretary of the Section on Ophthalmology and Otology of the Wisconsin State Medical Society, 1897.

The fact that inflammation of the middle ear is a serious complication of any disease from coryza to syphilis has been emphasized again and again in aural text books and other literature, yet it would seem that these warnings are neglected by many physicians, and the dangers of middle-ear inflammation are not at all recognized by the laity. Otologic practice is largely made up of the results of neglected or ill-treated cases, many of which have arisen as otitis media, occurring in the course of general affections. If it be a child with earache, nasty decoctions, such as chamomile tea or laudanum and sweet oil, are douched or dropped in the canal, and when the drum-head bursts or ulcerates the discharge is allowed to flow out of the external opening, becoming a fertile source of further infection. Thus the simple catarrhal otitis is readily changed into an intense suppurative process by infection from without. It seems reprehensible that such should be allowed to occur under the hands of otherwise qualified physicians, yet our case books constantly record such instances. Only a few weeks ago I was called to the death-bed of a woman who had meningitis of otitic origin, beginning in an earache ten days before. The disease had been allowed to progress, as the pain was partially subdued by opiates, until the inflammation and its products had taken the line of least resistance, lepto-meningitis resulting before the drum-head ruptured. The inflamed tympanum is a common and often recognized cause of meningitis in children. Relief of the discharge by a properly conducted paracentesis would have relieved the symptoms and prevented complications in nearly all of these cases.

From the point of view of the modern otologist, a discussion of the reasons for early opening of the drum-head in acute otitis media

*Read before the Wisconsin State Medical Society at Racine, Wis., May 5th, 1897.

would seem superfluous reiteration. I cannot see why objections should be raised to such a simple procedure which gives such immediate relief of symptoms, mitigates the course of the affection and prevents development of sequelæ, yet I have found that some specialists (!) seldom practice paracentesis despite its urgent indications. When secretion rapidly forms in a closed cavity, as the middle ear and its adnexa certainly are when the Eustachian tubes are closed by inflammation, a point is reached when something has to go. Unless the tympanic membrane be unusually tough in acute otitis media it bursts spontaneously with loss of tissue, and a hole is formed similar to that which would be made by kicking into the head of a base drum. The pain is relieved both by spontaneous perforation and by paracentesis. The following points should be remembered:

I. Earache is but a warning of, perhaps, dangerous disease, the pain of which may be masked by opiates to the ultimate risk of the patient's life.

II. If the drum-head be reddened or bulging, or if fluid be detected, it is advisable to incise the membrane at once before it bursts, as the character, location and extent of the tissue destruction is thereby limited.

III. Pain is relieved at once by the paracentesis, the course of the disease is shortened, the symptoms mitigated and sequelæ prevented by this, and after appropriate treatment.

IV. If the case be seen after spontaneous perforation, the hole in the drum-head will often be found to be too small or poorly adapted for proper drainage, and it may be advisable to enlarge it by paracentesis.

V. The little operation gives but temporary pain, and, if the physician does not make too much of a show, will be tolerated by any patient who will be thankful for the relief afforded his symptoms.

Meddlesome after-treatment should be discouraged, as when the diseased part is protected from further infection and the discharge not too frequently removed the case will usually run a mild course.

The canal should be wiped dry and rendered aseptic by sublimate or boric wash, the paracentesis done under sufficient illumination by the head mirror and speculum, which should be in the hands of every practitioner who should not hesitate to perform the operation in any case where an otologist is not available. A wick of iodoform gauze should be placed in the canal, to be removed not oftener than every three hours, for gentle removal of the discharge by gentle syringing with warm boric acid solution, after which the canal is wiped dry; another wick of iodoform gauze is inserted and absorbent cotton

placed in the canal to exclude the outer atmosphere. Attention to the immediate causes of the middle-ear affection should be given, general symptoms met by phenactine, atropine and quinine, the bowels moved by calomel and salines, the nose and throat sprayed by a warm alkaline solution for cleansing purposes, and the nasal irritation and intumescence relieved by camphor-menthol or other appropriate spray.

128 Wisconsin St.

DIPLACUSIS AND EXTRACRANIAL TINNITUS.

BY DR. PEDRO VERDÓS (BARCELONA).

Translated from *Revista de Laringología, Otología y Rinología* for *THE LARYNGOSCOPE* by Dr. Vincent Gomez (New York). Visiting Ophthalmologist to the Almshouse, Workhouse and Incurable Hospitals; Assistant Surgeon New York Eye and Ear Infirmary; Instructor in Diseases of the Ear, New York Polyclinic, etc.

Cases of diplacusis and of extracranial tinnitus occur so rarely that but few otologists have had occasion to observe them. With respect to diplacusis, I must declare that I am acquainted with but one observation, presented by my distinguished friend, Dr. Gellé, to Biological Society of Paris in 1888. As to extracranial tinnitus, our knowledge is not to-day as limited as formerly. Various writers, and especially Politzer, have contributed to elucidate this problem of otology, although they point out the rarity of this phenomenon. In view of these facts, I have deemed it wise to present additional facts, noted in a case recently observed, in order to contribute to the resolution of these intricate problems of the pathology of the ear.

These two forms of neurotic disturbance of the auditory apparatus have never been seen to occur together, at least not to my knowledge. The case which I wish to cite is of special interest because both phenomena are equally prominent in the same individual.

The patient was a woman about fifty years of age, single, of lymphatic temperament, obese constitution and without any previous history worthy of mention. She had suffered for some time from neurasthenia, for which she had been properly treated by Dr. Espadaler. Seeing that the diseased condition progressed in spite of appropriate treatment, and observing that the principal symptoms emanated from the auditory apparatus, the patient was referred to me by her family physician.

Questioning the patient, we elicited that her principal complaint was a constant tinnitus which she always perceived at a distance of two or three metres from her ears. She compared the tinnitus to the

noise made by escaping steam. Now and then, and principally when surrounded by silence, she also heard another sound likened to the human voice in a low tone. These peculiar noises, heard at a distance from the ear, so alarmed the patient that she was in a state of constant cerebral excitation.

On examination the organs of hearing presented nothing plausible which could explain the case. Both auditory canals, as well as the drum membranes, were in a normal condition. The Eustachian tubes were as permeable as in the normal subject. The nose and naso-pharynx were likewise normal. In a word, the organs of sound-transmission were perfectly intact. The auditory nerves seemed to be in a perfect physiological condition. Therefore, there was not the slightest degree of any diseased condition present. But when we attempted to examine the osseous conductivity through the cranial walls, the phenomena of diplacusis became surprisingly clear and pronounced.

Applying a vibrating tuning-fork at any point on the cranium, the sound was perceived by the patient at a distance of one or two metres on the opposite side. The fork being placed vertically she perceived the sound at the same distance, but it was more posteriorly. The same phenomena could be produced, employing Politzer's acumeter or the watch. The clinical phenomena never failed; every time the experiment was repeated identical results were obtained. This was not so, however, when the source of the sound, either the tuning-forks, the acumeter or the watch, tried at a distance of ten or fifteen centimetres from the auditory canal. Under these circumstances the perception was always at a distance of two or three metres, but at times it was perceived on the same side as the source of sound and at others on the opposite side. Here the diplacusis, in this case, was not constant. The electrical reaction of both nerves was normal.

We practiced all the known methods employed in the treatment of these conditions of hyperexcitability, and, although at the beginning the disease seemed to ameliorate, it later remained stationary, without our being able to accomplish a definite cure.

If we now tried to investigate the nature of the process capable of causing such disorders, and the pathogenic mechanism, by virtue of which they are developed, we would be lost in a labyrinth of hypotheses from which we could, with difficulty, extract ourselves. We know from general pathology, that *oloquiria* (diplacusis) consists in the perception of a sensation on the opposite side from which it has taken place, and we know, from observations published by

Obermeister, Ferrier, Fisher, Leyden, Hammond, Hutchinson and Brown-Sequard, that the phenomena of *oloquiria* usually occur in tabetic persons or in those affected with spinal lesions. But our patient never presented any symptom which would indicate or lead one to suspect the presence of a spinal lesion. Hence, what was the cause of this phenomena? The case reported by Gellé presented, likewise no symptoms of tabes, neither was she hysterical, but she had evident lesions of the middle ear, viz., otitis chronica in the hyperplastic and sclerotic stage. Besides, Gellé's case presented an extraordinary hyperexcitability of one ear, and from this fact Dr. Gellé admits that the exaggerated excitability of one ear was the cause of the phenomena present in his patient. He also said that the binauricular apparatus of accommodation could cease functioning with more energy on one side than on the other, and so give rise to the perception of sounds on the opposite side. In the writer's case none of these circumstances were present, and hence he must again ask: What was the cause of the *oloquiria* (diplacusis)?

If we analyze the phenomena of *oloquiria*, together with the phenomena proper of extracranial tinnitus, being that both conditions were present in the case observed, perhaps we would have to go into details somewhat in order to try to throw some light upon the physiopathological significance of the very rare phenomena which we are considering.

It is generally admitted by otologists, and sanctioned by the unquestionable authority of Politzer, that tinnitus, without material lesion of the auditory organs, recognize as a cause some circulatory disorder of the labyrinth or an especial irritability of the cerebrum or of the meninges. From the fact that in our patient the auditory nerves reacted normally, and as she did not have other symptoms indicating circulatory disturbance of the labyrinth, I do not believe that the case can thus be explained. Consequently, the key to the situation must be looked for, either in the brain itself or in the meninges. But as the knowledge we possess of the anatomy and physiology of the acoustic centres is as yet very limited, we are not now in a position to solve problems of this nature, and hence I will only contribute the clinical case.

CLINICAL REPORTS.

EXCESSIVE FLOW OF SEROUS FLUID FOLLOWING OPERATION UPON THE STAPES—RESULT SUCCESSFUL.

BY GEO. C. STOUT, M.D., PHILADELPHIA.

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Mary M., age 20; born in Ireland. Referred to me by my friend Dr. T. On Dec. 12, 1896, she complained of absolute deafness in her left ear, which dated from early childhood. There was no history of any of the diseases of childhood. Examination showed:

A. D. Tympanic membrane in good condition.

Rinne. Hearing normal.

A. S. Tympanic membrane in fair condition.

Rinne. Markedly negative.

When the right auditory meatus was thoroughly closed, the voice could not be heard, even when shouting close to the left meatus. Watch distance—not heard on contact. Bone conduction for tuning fork, good on both sides, but at this time the Gellé test elicited no reliable information. The nares and rhino-pharynx were in fair condition, save for a small tabe of adenoid tissue in the vault of the rhino-pharynx, which in no way impinged on the tube.

A careful and thorough course of treatment was carried out for seven weeks. This included Politzerization and catheterization, with the various applications to the left Eustachian tube through the catheter. Massage by Sieglé, as well as through the Eustachian catheter—the whole gamut. The result, as to the improvement of the hearing in the left ear, at the end of this period, was absolutely negative. The patient was determined to be benefitted at all hazards, if possible, and she was advised that an operation *might* benefit her for a time at least, and as the ear in its then condition was absolutely without value, the risk of injury to the hearing was *nil*. Gellé at this time indicated that an operation would probably result favorably, but the accuracy of the answers given was questioned later.

On Feb. 3, 1897, the inco-stapedial joint was cut, under cocaine anæsthesia and strict asepsis, after the usual manner. A 4 per cent. solution of cocaine was used for anæsthesia and $\frac{1}{1000}$ Hg Cl₂ for

the asepsis. Cutting the joint did not apparently improve the hearing in the slightest degree, nor did the somewhat violent attempts at mobilization of the stapes, although some dizziness resulted from the latter.

On Feb. 4th, the patient reported having had but slight pain during the night. Further mobilization was attempted. Again no result.

Feb. 10th, I removed the incus and again attempted forcible mobilization, with no result, excepting that at 1 o'clock of the following morning (nine hours after the operation) the patient awakened with vertigo and vomiting, which passed away in a few minutes, and the next morning she felt no ill effects, and walked six blocks for treatment. The opening in the drum was now allowed to heal shut, and the patient advised to make no further attempt to regain her hearing.

On May 13, 1897, however, she returned, and was so persistent in her request that something more be done, that a further step was decided upon.

An incision having been made in the posterior-superior quadrant of the membrane, the outer end of the small blunt Dench knife was entered beneath and above the stapes and the handle gently rotated with the knife in each position. At this stage the patient started violently, causing the knife to describe a rapid unguarded circuit, which caused excessive pain. Upon inspection, the incision of the tympanic membrane was found to have been enlarged anteriorly, and the sharp pain was probably due to movement of the malleus by the knife. A small amount of serous fluid followed the knife out, but the pain soon passed away and there was no dizziness. After aseptisizing the fundus anew, the patient sat down in the reception room for a few minutes preparatory to going home. In about five minutes, she said that a warm fluid was running from her ear, which had saturated her handkerchief. In a very few minutes, two handkerchiefs were completely saturated with the fluid, the quantity of which was estimated at more than a drachm. When lying on the opposite side of the head, the ear would well full of this fluid in less than ten minutes. The external meatus was therefore packed firmly with iodoform gauze, which had been previously soaked in oil, and the patient sent home. An hour later, the discharge had somewhat abated, but was still oozing. Upon reaching home, she had climbed four flights of stairs to her room, after which a severe pain set up all through her head; this was relieved by lying down. On the following morning she awakened with a severe headache, which responded to bromide and chloral mixture. The fluid was still oozing somewhat

freely. The oozing continued until evening, when the discharge became so rapid that repacking became necessary. She was put on liberal milk and broth diet, kept in bed, and the oozing continued for four days, with occasional remissions, but no absolute cessation.

During this time the patient was free from pain and dizziness. The pulse, at one time, was as low as 50 and soft. After the removal of the packing, the spoken voice could be heard at six inches on the affected side. This improvement of hearing remains, to a somewhat lesser degree, at the present time. The quantity of fluid lost in this case was excessive, and the interesting feature is to account for its source. There may have been a cyst located in the neighborhood of the point of operation, the opening of which might have caused the flow and relieved the deafness. This theory is very unlikely. On the other hand, the knife is too delicate to fracture any petrous bone which I have ever seen.

To have opened up the tegmen in this position, the facial nerve must have been injured.

If the first turn of the cochlea was opened, or even if the entire ledge between the foramen ovale and the foramen rotundum was broken through, the flow was seemingly too large and rapid to be accounted for. Then, too, the hearing returned after the operation, which would probably not have been the case in the latter contingent. Is it not likely that the facial canal was opened, and the subdural fluid oozed out by way of an unusually large *acqueductus fallopii*?

Upon the cessation of the flow, the patient made a rapid recovery and she is now more than pleased with the result.

34 S. 18th St.

FRACTURE OF THE CARTILAGINOUS EXTERNAL AUDITORY CANAL, RESULTING IN COMPLETE OCCLUSION—OPERATION.

BY M. A. GOLDSTEIN, M.D., ST. LOUIS.

Through the courtesy of Dr. F. C. Bæcht, of Brussels, Ill., who referred this interesting case to me, I am enabled to present a complete clinical report. I append Dr. B's record, prior to our consultation:

"J. S., butcher, æt. 39, while quartering a beef, was struck on the left side of the face, with the end of the handle of a windlass, by the sudden 'giving-way' of the apparatus from which the animal was suspended.

"The blow made a deep but clean-cut wound, extending from the

inferior maxilla, about one inch anterior to the angle, upward to the zygoma. The direction of the wound was inward and backward, the two last molar teeth of the lower jaw were knocked out, and there was a small opening into the buccal cavity. The inner area of the wound could not be explored, owing to patient's inability to separate his jaws.

"The blow also fractured the anterior and inferior walls of the cartilaginous portion of the external auditory canal of the left ear, pushing the fragments, together with some of the surrounding soft tissues, into and completely occluding the canal.

"I tried to press it back into place, but it resisted all efforts; not knowing how much of the canal was involved, I decided to let it alone, thinking this portion would become detached later.

"The wound was thoroughly cleansed, first with soap and water, then with 1 to 2000 hydrarg. bichlor., and packed with iodoform gauze. Two days later, when removing the dressings, same were found completely saturated with a serous fluid, which, on investigation, was found to flow from the ear. This led me to suspect a fracture of the petrosa. Dressings were changed daily for one week, when all discharge stopped.

"Two weeks after the injury, the wound of the face had healed, and the only complaint was a decided deafness in the left ear."

One month later Dr. Bacht brought the patient to my office. An examination of the ear revealed:

A complete occlusion of the external auditory canal, at a point about one-half inch from the meatus. The obstructing mass presented a smooth surface, and the dermal covering of the canal was continued over the tumor. A very thin probe revealed the attachment of the mass to the floor of the canal and also partial adhesion to the lateral walls. After some manipulation, the probe could be passed between the superior wall of the canal and the convex surface of the tumor. To the touch of the probe the mass felt slightly elastic, like contact with cartilage.

The tuning fork and watch tests determined hearing good by bare conduction, and *nil* by air.

As a precautionary measure, I made a small incision through the skin and found the underlying mass composed of cartilage.

After application of 10% cocaine solution, I cut a small piece from the upper convex surface of the mass, in order to allow of more room for manipulation. The knife employed was a straight, narrow, probe-pointed bistoury. I then made a U-shaped incision, with the apex reaching to the floor of the canal. As the obstruction was com-

posed entirely of cartilage, the cut was readily and smoothly made. The depth of the mass was about one-half inch. With its removal the canal was left clear throughout its entire course. The membrana tympani was seen to be intact, but slightly congested. A tightly-wound cylinder of cotton, dusted in boracic acid, was introduced into the canal, and the patient instructed not to touch same. In three days a new cylinder was substituted, and this procedure continued until all danger of cicatrization had passed. The recovery was complete, the canal pervious, and normal hearing was restored.

The case presents several interesting features. First, the remote area of the original injury. Second, the peculiar fracture of the cartilaginous canal. Third, the simplicity of the operation.

A Frequent Significance of Epistaxis. Dr. J. H. Fruitnight.
(*Medical Record*, May, 1897.)

Frequent nose-bleed in children commonly accompanies chronic valvular heart disease, mitral obstruction and aortic regurgitation being the usual forms.

(This symptom is also a frequent manifestation of adenoid vegetations in the pharyngeal vault. By their mechanical action they cause a venous stasis in the turbinated bodies, the movement of which at times gives way, and so causes the symptom under consideration.)

M. D. L.

Fracture of the Cricoid Cartilage. Dr. G. B. Story. (*Medical Record*, May, 1897.)

Patient, a male, thirty-two years old, was struck on the right side of the neck by a piece of wood from a log which was being sawed, fifteen feet away from his position at the time of the accident. He was seen thirty minutes after the accident, and his breathing was difficult and stridulous. Cough was frequent, and he expectorated frothy and bloody mucous. There was distinct emphysema of the neck and lower portion of the face. When first seen he was able to speak in a weak but very light-pitched tone of voice, but complete aphonia soon followed. Patient was ordered to be moved to the hospital with the view of performing intubation or tracheotomy, but he had been carried but a short distance when he expired. At the autopsy, a few hours after his death, the entire body was emphysematous. The eyeballs protruded and the pupils were dilated. There was bruising of the pneumogastric and recurrent laryngeal nerves and a fracture of the left side of the cricoid cartilage, extending through the attachment of the cricoid-thyroid muscle. Emphysema, œdema and hemorrhagic infiltration of the glottis was also present. Patient died from asphyxia.

M. D. L.

CORRESPONDENCE.

ST. LOUIS, August 25, 1897.

Editors THE LARYNGOSCOPE:

I am in receipt of a clipping from a German publication, sent me by a gentleman who had read my essay on "The Nose," in the August LARYNGOSCOPE, containing in substance the following:

It seems a recent issue of the French journal, *La Nature*, reported a case of a man who could see with his nose. Commenting on this, a Bologna medical journal affirmed that it was nothing new, since such phenomena had been observed one hundred years ago. Thereupon, it proceeded to state that a case of nasal vision was recorded on page 82 of a certain book in the Bologna University Library. This book is by the German, Johann Zahn, was published in Nuremberg, 1802, by F. E. Adelburner, and is entitled "Oculus Artificialis Teledropticus Sive Telescopium Est." A peasant lost his right eye in childhood. Later in life he fell from a cherry tree, striking in a thorn bush, lacerating his face and tearing his left eye-ball from the socket. A year later, being entirely blind, while working in his garden, he seemed to perceive light through his nose. Acting upon this suggestion he practiced visual exercises with his nose for five years, and was finally rewarded by being able to discern objects below that organ, but could see nothing above it. The author cites as witness the celebrated Dr. Heinrich Svezius.

No one who has read the undersigned's essay will question his estimate of the nose and its possibilities, but—well, the cherry tree association, at least, is suggestive of verisimilitude.

In this connection, I may make mention of the fact that the Australian savages are employed by the police of that country to track their kind who have infringed the law. They get down on all fours and scent the tracks after the manner of animals. Very soon after being placed in civilization they lose this faculty.

FAYETTE C. EWING, M.D.

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EDITORIAL.

CONDENSATION.

With the birth of the numerous medical periodicals, which continually make their appearance in the literary sphere, necessity demands that this unceasing flow of original thought must be abridged, and offered to the profession at large in a concise and useful form. THE LARYNGOSCOPE has taken upon itself this laudable duty, and we feel that our efforts in the past have been duly appreciated by our readers. When we consider the interesting and rich material offered before the numerous medical societies, much of which does not find its way into

the current literature, owing to the want of space, it behooves us to carefully abstract such valuable data, thus eliminating the extraneous matter and avoiding the loss of practical facts. The happenings and results of the day are the subjects which interest us most.

It is for this essential reason that such reading matter should be offered to the busy practitioner in a digestible form, thus permitting of its absorption without much effort.

Though an ardent admirer of classical diction, same loses its force when one desires to get at serviceable therapeutic facts.

One picks up a journal and scans its contents. If a special subject is embellished with lengthy arguments the reader is apt to lose interest, and lays same aside without deriving the information which he expects to find.

For this important reason authors should attempt to write to the point, thus assisting the reader to acquire a ready conception of the clinical features.

THE LARYNGOSCOPE earnestly tries to follow this axiom, thus avoiding lengthy papers, if feasible, and at the same time giving to its readers a practical resume of American and foreign literature. The reports of societies, which honor us with their representation, are published in the same useful manner. We feel that by so doing one comes in touch with a far greater range of experience, and is thus enabled to apply his gleanings in a serviceable and successful degree.

LEDERMAN.

IS THE EUSTACHIAN TUBE OPEN OR CLOSED DURING THE ACT OF DEGLUTITION? CLOSED!

All our standard works that mention the functions of the Eustachian tube claim that its post-nasal orifice is open during the act of deglutition, thereby allowing a renewal of air to the middle-ear. It is for this reason that patients are directed to swallow when the physician desires to inflate the middle-ear by the Politzer method.

As early as 1868 Dr. Thomas F. Rumbold announced it as his opinion, as the result of four years' experimentation and study on the "Functions of the Eustachian Tube,"* that the prevailing idea regarding the patency of the Eustachian tube during deglutition was erroneous. He stated, at that time, that the act of deglutition *closed* the mouth of the tube. Numerous experiments made since this announcement have confirmed this opinion. Although this announce-

*Paper prepared and read to several medical men in 1868, and read before the St. Louis Medical Society, February, 1872.

ment, and the experiments from which this deduction was made, has been repeatedly published and elaborated, our text books still hold to the erroneous theory.

At the meeting of the Western Ophthalmological, Otological, Laryngological and Rhinological Association, in April of this year, Dr. Hamilton Stillson read an interesting paper on "Experiments on the Eustachian Tube by means of the Tongue thrust into the Naso-Pharynx,"* in which he held that the tube was closed during the act of deglutition. This he demonstrated, to his own satisfaction, by means of his tongue placed against the orifice of the tube during the act of swallowing. As the prevailing idea regarding this subject has been so firmly implanted in the minds of the profession, this overturning of accepted theories might again have gone unheeded had it not been that, fortunately, Dr. Hanau Loeb presented before the association, at the same meeting, a patient who had undergone an extensive operation for epithelioma of the nose.† In this case the loss of tissue was so extensive that direct inspection of the post-nasal orifice of the tube was possible, and it was then seen, by all present, that the tube was *closed* by, and during, the act of deglutition, thus setting at rest this disputed point, and also proving that one of the functions is *not* to allow of the renewing of air in the middle-ear during the act of deglutition.

THE EARLY TRAINING OF CHILDREN FOR THROAT EXAMINATION.

Certain throats are abnormally sensitive on account of some pathological condition, which tends to cause gagging and other reflex disturbances. In many throats, however, this is not due to any diseased process, but simply to lack of training of the individual. Where this lack of training is combined with an inflammatory process, we have a condition of irritability which is trying both to the patient and to the physician. In some cases it is so aggravated that the mere protrusion of the tongue is sufficient to produce a severe paroxysm of retching.

These disagreeable symptoms could be avoided by the early training of children for throat examination. Many mothers realize the necessity of examining the throats of their children systematically, and, no doubt, many cases of incipient diphtheria have been arrested by the prompt recognition of the first deposit in the throat. Few parents, however, go beyond this.

*See page 38, vol. III., THE LARYNGOSCOPE.

†See page 131, vol. III., THE LARYNGOSCOPE.

A very simple procedure, and one which children soon learn to tolerate, is the depression of the tongue by means of a spatula or simply the handle of a spoon, in order to expose fully the palate, pharynx and tonsils. At first this produces some irritation, not only from the presence of the foreign body, but also by the spasmodic movements of the undisciplined tongue. This is overcome by patience, however, and the child soon learns to tolerate the spoon and to exhibit its throat with the utmost facility.

The advantage of this training is not merely theoretical, nor is it simply for the benefit of the physician. Many a little patient, no doubt, has had an untimely end on account of its inability to tolerate the application of the proper medicaments to the diseased throat. Even in the case of adults, every specialist realizes that the tolerance of the throat is an important factor in deciding between a mild internal operation or the graver external operation, or in some cases even the admissibility of an operation of any kind.

In routine cases also, both the patient and the physician are spared a great deal of annoyance by the proper training of the individual for throat examination. There are probably few cases in which this training is not practicable. The professional "sword swallower," in his early training, applies the handle of a spoon against his throat, which may be at first quite irritable, but this procedure soon effects such tolerance of the parts that later on the "swallowing of the sword" becomes an easy process.

A lady recently stated that her children had no difficulty in swallowing pills, because in their infancy her family physician had given them small bread pills to swallow in play, so that later on, when the necessary pills or capsules were to be administered, they were swallowed with equal facility.

The early training of children for throat examination is, therefore, not only useful, but may even prove an important factor in the prognosis of a disease which threatens the life of the patient. Every physician, therefore, should call the attention of the parent to the importance of early training in this matter, and show them by what simple means this end may be effected. SCHEPPEGRELL.

The many friends of Dr. M. D. Lederman, Associate Editor of THE LARYNGOSCOPE, will be pleased to learn that he intends taking another degree in life, that of Benedict. The young lady who is responsible for this radical metamorphosis in the life of our esteemed confrere is Miss Belle Weil, an accomplished member of New York society. THE LARYNGOSCOPE, editors and staff, herewith tender their heartiest congratulations.

SOCIETY PROCEEDINGS.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOL- GICAL SOCIETY.

[PROCEEDINGS CONCLUDED.]

A Gouty Rhinolith.

Dr. H. H. Curtis exhibited a calculus that had been extracted from the nose of a gouty subject. The patient, a woman of forty-five, had presented herself with almost complete obstruction of the nose. The obstruction proved to be due to this rhinolith, which measured $1\frac{1}{2}$ inches in circumference and $1\frac{1}{2}$ inches in thickness. By adjusting two snares around it, enough fragments were chipped off to enable him to deliver the stone through the nostril. The stone contained no nucleus in the central cavity. There were gouty deposits in both ears and in several joints of the hands.

The Cure of Singers' Nodules.

Dr. Curtis read a paper with this title. He said that a singer's nodule was an inflammatory growth situated at the junction of the anterior and middle third of the vocal cords. These nodules were due to an injurious method of taking the tones, or using a focus of tone in such a way that attrition became possible. The damage occurred in singing what was called the upper medium register. That they were not true nodules, but the result of attrition, had been demonstrated by investigations with the stroboscope. The patient should be directed to talk, and not to sing, repeating the sound of A. While holding the tongue with a tongue-depressor, the patient is next directed to change to E. One of the first symptoms of singer's nodules was that the singer's voice became hoarse after singing. They did not necessarily come from overwork, or from cold. In opera singers he had frequently noticed nodules appear in a single night, as a result of a change from one language to another. In the acute cases the necessary exercises for their relief should be begun immediately. By a proper use of gymnastic exercises the singer was put at once into a condition for singing. The object of the treatment was to make the cords adopt a new method of vibration. By a mental effort, the singer should strive to bring the tone to the lips; the lips should be separated by dropping the lower jaw, and they should not take part

in the production of the sound. If the mouth were made a resonator, the musical note would be greatly accentuated by opening the mouth. By plucking the lower lip with the finger it would be found that if the lips were in use one would at once get an answering hum. Simple exercises in singing that he had devised represented fifteen years of study of tone production. The accessory cavities of the face were the normal resonators of the human voice. It was very important that patients should not be allowed to talk during the treatment, for they talk in the medium register, and hence aggravate the trouble. The patient should be made to raise the chest, not by a respiratory effort, but purely by a muscular effort. This effort should be prolonged, and by doing this the breathing would become purely diaphragmatic, the size of the chest at the apices would be increased and the timbre improved.

Dr. G. Hudson Makuen, of Philadelphia, said that the description given by Dr. Curtis of the origin of tone was entirely new to him, and he was inclined still to believe that the primary tone began with the vocal cords, even in the nasal hum described by him. He did not understand the statement that the tone was produced independently of, and before the vibration of the vocal cord. He had examined the vocal cords of many singers, and had found singer's nodules very rarely. None of his cases had been so marked as those shown in Dr. Curtis' pictures. He thought Dr. Curtis' success with these patients was due to the fact that he had been able to teach them to use the vocal cords in the normal easy manner, beginning the tone with the vocal cords in an easy, natural position, and not with a notable click which he had so well illustrated while reading his paper. He was a great believer in the practicability of curing laryngeal troubles by normal, easy and proper use of the voice, yet he hardly felt like accepting the theory of the origin of tone as propounded by Dr. Curtis. In his own experience, singers did not produce the tone with this click, resulting from bringing the vocal cords together tightly.

Dr. Scheppegrell said he desired to thank Dr. Curtis for his interesting contribution.

Dr. Dwight L. Hubbard, of New York, said that he had tried this treatment before he had known of it directly from Dr. Curtis, as he had been taught it by a singer. Dr. Curtis' method gave rest to the vocal cords without idleness. They were brought into a position of approximation, but the resonators above, although, in his opinion not producing the height or depth of tone, did produce the quality of tone. Singers who employed this method said that the tone placement was

in the face, and that the force producing the tone was in the diaphragm, when the intercostal muscles were in action, as already described.

Dr. Curtis, in closing, said he thought he had stated clearly that his object was to make the vocal cords "accept" the proper vibration by making the initial impulse come from above in exactly the same way that the air enters an organ-pipe. The air enters the latter, and at once the reed of the pipe accepts certain vibrations in accordance with the dimensions and capacity of that pipe. In putting the mind on the resonance of the face the latter is made unconsciously an organ-pipe. The air must come necessarily in the initial impulse through the vocal cords, but the idea of the pitch to be given to the vocal cords was accentuated to the patient by fixing the mind on the face and chest, and taking away from the cord the idea of production of tone. He made the cords adapt their pitch to the pitch already established by the organ-pipe above. Of course, a musical tone could not come except from the vocal cords, although certain tones could be made even where the larynx was entirely absent. He recalled the case of a man with hemiplegia who had lost his voice entirely. He was not able to make an articulate sound of any kind. He had an adductor paralysis, and it was not possible for him to communicate in any way, there being paralysis of the tongue and face. He was asked if he had ever sung, and on learning that he had, he was instructed to make a flute sound, which he did by causing a vibration of the air in the nasal cavities.

(1) Sarcoma of the Larynx.

(2) Sarcoma of Naso-Pharynx in an Infant.

Dr. T. H. Halsted, of Syracuse, reported these cases. He said that the disease was now a rare one, yet he felt sure that owing to the fact that unsuccessful cases were not often reported, the condition was not as rare as statistics would seem to indicate. His two cases—the only ones of the kind he had seen—had come under observation during the past year.

Case I.—J. H., a man, fifty-seven years of age, came to him on June 11, 1896. There was difficulty experienced in swallowing just as the food reached a point opposite the larynx. A constant, ropy secretion was expelled by coughing, and there was an excessive secretion of saliva. The laryngoscope showed a rounded, grayish, non-ulcerated tumor, sessile, and about the size of a walnut. On June 17, the tumor was removed in four pieces by the cold snare. It was examined and reported to be a large round-cell sarcoma. The patient did not return until July 17, and then it was found that the growth

had recurred, and was larger than at the time of operation. Partial laryngectomy was offered as the only chance, but the patient did not appear again for six months. At that time he had severe paroxysms of dyspnœa, particularly at night. Leaning forward at any time excited great difficulty in breathing. He had lost flesh. The tumor filled the larynx. The vocal cords could not be seen. On January 29, a tracheotomy was done because of an exceedingly bad attack of dyspnœa. A week later the growth appeared at the opening in the trachea. In another week it had reached up to the base of the tongue. For these two weeks he was more comfortable than before the tracheotomy, but his general condition did not improve. He died on April 27th. For six weeks prior to death a large part of the fluid food taken would be regurgitated. The cough was a constant and distressing symptom. Codein was very effective in controlling this cough. There was slight hemorrhage at times, and on one or two occasions it became very profuse. The sufferings of this patient were so pitiable during the last two months that should another such case present itself, he would more strongly urge operative interference at an early stage, death on the table being preferable to the course of this case.

Case II.—A child of two years; respirations labored, noisy and rapid; cyanosis marked; child dull and only partially conscious. The right side of the nose was occluded by a yellowish-white growth. The soft palate was pushed forward by another mass. The attending physician had seen the child first twenty-three days before. This child's symptoms had developed at the time that there were in the neighborhood a number of children suffering from a catarrhal affection. Tracheotomy was performed, as the mother insisted upon some measure for the child's immediate relief, but it died shortly afterward.

Dr. Logan recalled a case of round-cell sarcoma of the posterior nares, which had been previously removed eight or nine times before coming under his observation. He found in the naso-pharynx a tumor about the size of an English walnut, which he removed by the gradual method with a galvano-cautery. He had seen the patient, four years later, and up to that time there had been no recurrence of the disease. Now, he had to report that three years later still, the patient had died of sarcoma of the stomach, but without a return of the growth in the posterior nares.

Dr. Dench said that he had seen a case of sarcoma of the naso-pharynx within a year or two. It had come to him with symptoms pointing to the ear. The attack came on after "grip." Only an effusion was found, and the patient was complaining of severe head-

ache on the affected side. The vault of the pharynx contained a mass of tissue which resembled hyperæmic lymphatic tissue. As the patient was fifty-five years of age, he removed a piece and had it examined. It was reported to be fibro-lymphoma. Thinking it granulation tissue, he advised against treatment of the ear, but in favor of the removal of this tissue. An exploratory craniotomy was done by Dr. Keen, of Philadelphia. The patient died shortly afterward, and the pathological examination showed the growth to be a small-cell sarcoma.

Dr. J. E. Nichols said that he had met with four cases of sarcoma of the naso-pharynx. On two he had operated, and in two he had refused to operate. All four died. One of the operative cases lived for two years, and then died from an extension of the growth in all directions. As the growth was usually situated so far back, considerable progress would have usually been made before the condition was diagnosed; hence, the difficulty in deciding upon operation. While a radical operation might prolong life, cure was impossible. Regarding operations on the larynx, the speaker said that one hesitated between the desire to effect a cure and the desire to relieve symptoms. He had met with three cases. In two the growth was in its early stage; the two died within ten days, one of septic endocarditis, in spite of precautions against sepsis, and the other from an unknown cause. The third case, apparently the worst of all, lived the longest. In all these cases complete extirpation of the larynx was done. He thought that, personally, he would prefer to let the disease take its course rather than submit to operation.

Dr. T. Passmore Berens, of New York, said that he had had four cases of malignant disease of the larynx. Two of them had been operated. One died of septic endocarditis; the other probably from an extension of the inflammation to the vagus nerve. He recalled a case in which the man had suffered dreadfully for eighteen months, and probably would suffer in this way for six months more, and raised the question as to whether or not most people would prefer the operation. Personally, he favored early operation, and where there was only slight glandular involvement, even a rather late operation.

Dr. Myles said that he had seen several cases of malignant disease of the larynx and pharynx. Last year he had met with two cases in the larynx; one refused operation and the other accepted. The one who was operated upon about a year ago was to-day apparently well. The other one, who had had tracheotomy performed, had nothing but misery and was anxious to die. A few months ago a case of undoubted sarcoma had come under observation. The soft palate and part of

the constrictor muscles had been removed, and the dissection had been carried down along the important vessels of the neck. The growth was removed by the electro-cautery. The wound had healed kindly, and, so far, there had been no recurrence. A portion of the muscles had also been removed, because the microscopist's report indicated that the disease had spread into the muscular tissue. It would seem, therefore, that there was an advantage in operating on these cases.

Dr. Scheppegegrell reported a case which had started as a fibroid tumor of the naso-pharynx. He had removed the growth, partly by the snare and partly by the cautery, doing it rapidly, because he believed this gave the best results. When the tumor recurred, another physician treated him by mild currents of electricity. The case became worse and death finally ensued. The later histological examination revealed the existence of a fibro-sarcoma.

Dr. Halsted, in closing, said that cases of sarcoma should not be confounded with cases of carcinoma of the larynx. One case of carcinoma of the larynx on which he had operated nearly two years ago had been very comfortable.

The Surgery of the Faucial Tonsil.

Dr. G. Hudson Makuen, of Philadelphia, said that two conditions of the tonsil should be considered as pathological: (1) The hypertrophied condition so common in children; and (2) the later stage of this, known as the atrophied condition. The faucial tonsil, no matter how large, did not, as a rule, interfere with breathing except when the vault of the pharynx was also obstructed; but the enlarged tonsil acted unfavorably on the surrounding tissues, irritating the parts and causing congestion and hyper-secretion. The adhesions often caused the formation of a pocket, in which the secretions collected and decomposed, and, perhaps, finally burrowed into the tissues, giving rise to a tonsillar or peri-tonsillar abscess. The atrophied tonsil was as prejudicial to health as was the hypertrophied tonsil. All measures not surgical were only slightly palliative. The indications were to reduce the size of the mass and favor cleanliness by removing the pockets or crypts. He used a blunt hook for diagnostic purposes, and a cutting hook for separating the adhesions. After such operations the raw surfaces should be seared with the cautery, and then the parts should be sprayed with peroxide of hydrogen and annointed with liquid albolene. By such precautions the patient rarely suffered from the operation. If the tonsils projected beyond the pillars they should be removed, either by the tonsillotome or by means of knives.

A method which he had found very useful in adults was the opening up of the crypts at repeated sittings, and so gradually removing the redundant portions of the tonsil.

(Discussion on this postponed until after Dr. Renner's paper.)

Primary Syphilitic Infection of the Tonsil.

Dr. Arthur G. Root, of Albany, reported the case of a man who had had the usual diseases of childhood and had had reasonably good health up to an attack of gonorrhœal rheumatism in the spring of 1894. This attack lasted for four months. During March and April of 1896 the patient contracted a cold, which affected the tonsil. The next month the same tonsil again troubled him, and it became painful and inflamed in June. At this time the man noticed a few blotches on the abdomen. When seen, two weeks later, the tonsil was the seat of a grayish ulcer, and the sub-maxillary and cervical glands were enlarged. The patient was given internally the proto-iodide of mercury, and the saturated solution of iodide of potassium, three times a day, and his diet and habits were regulated. The throat was kept in good condition by local applications, and at the present time the local and general conditions were good. In commenting upon the case the speaker said that after a careful investigation of the patient and of his mistress, he had come to the conclusion that the lesion was probably the result of kissing the girl, and that the infective agent had gained entrance owing to the inflamed condition of the tonsil.

Dr. Renner said that he had seen two cases of this kind, both of which had deceived him for two weeks, or until the secondary symptoms had developed. In both, his original diagnosis had been quinsy. He inquired the reason for using iodide of potassium so early in the treatment of the case reported.

Dr. Root said that he did not believe in the division of syphilis into primary, secondary and tertiary, the line of demarcation being too vague. In a general way, he approved of using iodide of potassium in the later stages chiefly.

Surgery of the Inferior and Middle Turbinated Bodies and Bones.

Dr. R. C. Myles said that operative interference was indicated in cases of hypertrophy, congestion and polypoid changes in the middle turbinate, where the turbinates obstructed operations upon the accessory sinuses, etc. It is his custom to render the nasal vestibule aseptic before operating upon the turbinates, carefully cleansing the parts with alcohol, and afterwards with a 1:1000 solution of bichloride of mercury. He used ordinary piano wire, Nos. 3 and 5, in the snare for removal of the inferior tip. He firmly believed that in some cases

the removal of the inferior body was absolutely demanded. After thorough cocaineization he made slight section through the bone anteriorly with a saw. He next inserted a Knight's scissors and made a section between the periphery and the attachment of the bone. Bosworth's snare was next introduced over the posterior part of the bone. The operation should never be performed when the septum was straight, the vestibule large and the fossa roomy. In certain cases in which the turbinates were hard and extended downward, and especially in gouty and rheumatic subjects, turbinotomy had given almost magical relief, and had been attended in his hands by no bad consequences. Bosworth's snare had proved to be the most useful instrument that he possessed for operating upon these cases. Submucous injections of acids and the electro-cautery were occasionally useful. He had had several cases of serious hemorrhage after the removal of the inferior turbinate, although never after the middle turbinate. The hemorrhages occurred from a few hours to a week after the operation. It was easily stopped by inserting a tampon of cotton saturated with tannic acid and gallic acid.

Dr. Cline said that this Society should take a stand against the present fashion of turning out throat and nose specialists after a few weeks of instruction in some medical centre. He cited a case in which, after an operation by one of these amateurs, secondary hemorrhage occurred and nearly cost the patient his life.

Dr. Cobb asked how much time was consumed in sawing off the posterior turbinate, and whether the incision was made with a straight or curved scissors before putting in the snare.

Dr. Myles said that he preferred Knight's scissors, and the operation should not occupy more than half a minute. He thought it perfectly safe to operate in this speedy manner.

Dr. Hubbard said that he had operated many times upon the inferior turbinate in the manner described by Dr. Myles, but packed the separated part against the bone by the use of an astringent tampon. This caused an adhesion, and a hyperæmia of the separated part would be found entirely relieved in a number of days. He had found this an excellent method of relieving stenosis in a number of cases, instead of removing the part completely.

Dr. Snow said that in the turbinated bodies, he believed, was to be found the key to the successful treatment of most of the catarrhal diseases.

Dr. Myles said that he had seen a number of cases in which it had seemed to him the turbinates had been unnecessarily removed. Teachers should insist upon saving the turbinates unless there was a distinct and definite object to be gained by their removal.

The Treatment of Suppurative Diseases of the Accessory Sinuses and of the Ear by Ozone Vapor. Exhibition of the Apparatus for the Generation and Application of the Ozone.

Dr. William Scheppegegrell, of New Orleans, read a paper on this subject. He said that the most economical and practicable method of generating the ozone was from the air. The nitrogen products were so infinitesimal that it was not necessary to remove them. The air from which the ozone was generated was supplied from the usual air reservoir, and the ozonizer was operated by an induction coil like that used for generating the X-rays. The ozone should not be heated higher than the temperature of the body, otherwise it would be decomposed. The concentration of the ozone was more easily controlled by regulating the induction coil than by regulating the quantity of air admitted to the ozonizer. The application should not be made for more than fifteen or twenty minutes, and should not be repeated more than twice a week. It should be given during expiration, and not inhaled. If inhaled, it would cause irritation and headache. Ozone not only inhibits the growth of micro-organisms, but also destroys them on the culture medium. He had obtained very satisfactory results with the ozone treatment in diseases of the upper air passages. The method was simple and inexpensive.

Report of a Case of Abscess of the Nasal Septum.

Dr. L. C. Cline, of Indianapolis, reported the case of a girl of twelve years, who had been treated for a muco-purulent discharge. Some months later she fell and struck the nose. There was considerable pain and hemorrhage, and an irregular practitioner being called in, diagnosed typhoid fever, and proceeded to treat her for the same. When he saw her there was an abscess of the nasal septum with marked displacement and injury to the bony structures. This case was one of septic fever, due to traumatism and negligent treatment. As a rule, the abscess involved only the cartilaginous portion of the septum. The case emphasized the necessity for more attention being given to these seemingly trivial injuries to the nose.

Dr. Phillips said that, in the several cases of abscess of the septum that he had seen, the cause had been traumatism; hence, general practitioners should be alive to the possible serious consequences resulting from blows on the nose, so commonly received by children. Many nasal deformities had such an origin. He had never met with abscess of the nasal septum in children.

Chronic Follicular Tonsillitis.

Dr. W. Scott Renner, of Buffalo, said that chronic follicular tonsillitis was characterized by the formation of plugs of secretion

resembling comedones. They were frequently the cause of an offensive breath. The tonsils themselves were often more or less hypertrophied, but not infrequently they were atrophied. Sometimes the patient complained of pain about the throat and ear, although occasionally they suffered from more or less obscure neuralgias. Patients who were subject to frequent attacks of quinsy were likely to have chronic follicular tonsillitis, and the removal of the tonsillar disease would do much to lessen the number of attacks of quinsy. Several cases were cited in which the voice had been impaired, or a cough kept up by the plugging up of a tonsillar crypt. The first indication for treatment was to open and destroy every crypt, and the second was to remove or destroy all the diseased mass of tonsillar tissue. It was important that all adhesions between the tonsils and the pillars should be broken up before any attempt was made to excise the tonsil. The cold snare would often effect a more thorough removal of the tonsil than would the tonsillotome.

Dr. Cline said that the small cheesy masses in the tonsils caused more suffering than perhaps any other one thing. A positive indication of trouble in the tonsil was a red ring around the pillars, even though the tonsil was not visible. His plan was to use a strong solution of nitrate of silver (gr. xl: oz. j). With the galvano-cautery he would operate upon two or three crypts at a time.

Otitic Brain Disease.

Dr. C. A. Thigpen, of Montgomery, Ala., reported the case of a patient who had had an attack of grip, followed by earache, and later by chilly sensations and elevation of temperature. Examination showed the drum membrane lustreless; hearing at a distance of two feet; temperature, 101.4°F ; pulse, 100. Behind the ear were slight swelling and tenderness. Near the external auditory canal and mastoid region there was no tenderness. On exploratory incision, he was surprised to find that the purulent process extended into the skull; the pus had passed along the mastoid groove and had finally escaped at the junction between the occipital and parietal bones.

A second case was reported—one of chronic mastoiditis. The tympanic cavity was entered and the ossicles removed. Shortly after her discharge from the hospital she had had a severe chill, followed by severe pain in the head. A second operation was done and the lateral sinus exposed. Some of the blood was withdrawn and found to be normal. The patient's condition being very bad, further operative interference was discontinued; nevertheless the patient reacted slowly and eventually recovered.

A third case was that of a man who presented a red and bulging

membrane. He was relieved temporarily by paracentesis, but in two or three days it became necessary to do a mastoid operation. No pus was found on opening the mastoid, and permission to go further had not been obtained. The operation was stopped, and he asserted the next day that he was much better. However, he became septic, and it was three months before he finally recovered.

A fourth case was a young man of nineteen years, who had suffered from otorrhœa, and more recently from nausea and vomiting. When first seen his temperature was 102° F.; the discharge from the ear was offensive and the mastoid region tender; he was quite stupid. The mastoid contained a small quantity of offensive pus, and offensive pus was also evacuated from the middle cranial fossa. He reacted well from the operation, but developed twitchings of the face, which continued with increasing severity for three days. An exploratory operation was then made over the fissure of Rolando, and about two ounces of thick, offensive pus escaped. After recovery from the anæsthetic, violent convulsions of the body ensued. He died the next day. Between the dura and the external osseous wall was a collection of pus which had been carefully walled in. There was a large pus cavity at the base of the temporo-sphenoidal lobe.

Mastoiditis with Thrombosis of the Lateral Sinus and Jugular Veins.

Dr. Ewing W. Day, of Pittsburg, read a paper on "Mastoiditis with Thrombosis of the Lateral Sinus." (See page 110, *THE LARYNGOSCOPE*, August, 1897.)

Dr. E. B. Dench said that at the last meeting he had presented two cases of brain abscess that had been successfully treated. Since then he had had three cases of sinus thrombosis. The third case was in an infant upon whom he had performed a mastoid operation a year before. In the interval the child had been perfectly well. On opening the old site of operation, he found the sinus plugged with a thrombus. This was removed and the wound packed. Recovery ensued. The other case was a man, twenty-two years of age, who had presented all the signs of mastoiditis. About four days later his temperature rose to 105.5° F., and on exposing the sinus, a thrombosis was found and removed. In another case there was beginning involvement of the lateral sinus, which was only discovered at the completion of the mastoid operation. The wound and sinus were packed and the patient recovered without further trouble. These cases abundantly confirmed the wisdom of these efforts at intra-cranial surgery.

Dr. F. L. Jack, of Boston, said that in these mastoid operations it was always difficult to decide just how far the operation should be carried. He referred to one case—an acute one—in which the temperature fell immediately after the operation and the removal of pus from the mastoid cells. After a week there was chill and fever, and on second operation a very minute spot of softened bone was found near the lateral sinus and was removed. He was quite sure that this was not present at the first operation. The patient became pyæmic and finally died.

Dr. Thigpen said that he always stated at the outset, to his patients with mastoid disease, that it was quite probable that two operations would be required. It was his practice to have the temperature taken every two hours after the operation, as he had found by sad experience that this was necessary.

Microbes in Suppuration of the Ear.

Dr. George M. Merritt (*Occidental Med. Times*, May, 1897) introduces his paper with the statement that "no suppuration occurs without the presence of microbes. The question arises, how do microbes reach the middle ear, when the drum is intact?" This may occur, in his opinion, through the circulation and stapes occurring in the capillaries of the mucosa of the middle ear, producing an abscess, which ruptures into the cavity; this he believed quite rare, but possible. The most common occurrence is due to direct extension of the disease by way of the Eustachian tube from the throat. Miller has isolated twenty-two different species of microbes in the mouth and others have there found virulent bacteria.

In middle-ear suppuration, the severest complication, namely, intra-cranial inflammation, is, according to Moos, produced by the streptococcus and the diplococcus of pneumonia. This latter is found mostly in the otitis following pneumonia, or in that due to "catching cold;" the streptococcus occurs more frequently after traumatism, or due to foreign bodies. The writer exhibited a number of cultures that had been made at the laboratory of the San Francisco Polyclinic from middle-ear pus, showing the various microbes. In some cases mixed infection was present.

F. B. E.

BOOK REVIEW.

Atlas der Histopathologie der Nase, der Mundrachenhöhle und des Kehlkopfes.

Edited and arranged by Dr. Otto Seifert and Dr. Max Kahn, of Würzburg, Germany. Large folio map, containing 77 chromolithographs on 40 plates, with accompanying explanatory text. Published by J. F. Bergmann, Wiesbaden, Germany. American agents, Lemcke & Buechner, 812 Broadway, New York. Price of Atlas complete, \$6.75.

This handsome and complete Atlas stands without an equal in the field of the Micropathology of the nose, naso-pharynx and larynx, and embraces every possible pathological condition of these organs.

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The elegance and beauty of this Atlas are the highest examples of the printers' art, and the price sufficiently moderate to place the volume within reach of all.

The fact that the edition is a German one should not deter the English reader from owning a copy, as the principal merit of the work lies in the plates.

A Collection of Essays Relating to Diseases of the Nose, Ear and Throat, considered from the standpoint of the General Practitioner. Edited by DR. MAXIMILIAN BRESGEN, of Frankfurt-on-Main, Germany. Vol. I. has just been issued from the press of Karl Marhold, Halle, Germany; octavo, paper bound, pp. 416; price, \$3.60. American agents, Lemcke & Buechner, New York.

This excellent collection of German Essays consists of the following:

1. "The Relationship of Angina to Acute Rheumatism." By Dr. H. Suchannek, Zurich.

2. "The Significance of Nasal Catarrh in Children." By Dr. Emanuel Fink, Hamburg.
3. "The Relationship of Acute Suppurative Affections of the Middle Ear to the General System." By Dr. Heinrich Schmalz, Dresden.
4. "Hemorrhages of the Upper Respiratory Tract, considered from a General and Special Standpoint." By Dr. L. Rethi, Vienna.
5. "Adenoid Growths as a Partial Indication of a Hyperplasia of the Lymphatic Areas of the Pharynx and their Relations to the General System." By Dr. Hopmann, Cologne.
6. "Suppurations of the Nasal Accessory Cavities, and their Sequellæ." By Dr. L. Lichtwitz, Bordeaux.
7. "Speech-Impediments in the Young in their Relations to Diseases of the Upper Respiratory Tract." By Dr. T. S. Flatau, Berlin.
8. "Deformities of the Nasal Septum, considered Specially and Generally." By Dr. L. Rethi, Vienna.
9. "Systemic Diseases and Diseases of the Nose and Throat in their Relations to the Ear." By Dr. Max Hagedorn, Hamburg.
10. "Scrofula its Character, and Relations to latest Tuberculosis of the Tonsils, Cervical Lymphatics and Neighboring Organs." By Dr. H. Suchannek, Zurich.
11. "Foreign Bodies in the Ear, their Treatment and Relations to the Surrounding Areas." By Dr. R. Hoffmann, Dresden.

Each essay is a complete monograph, and the prominence of the excellent array of authors is a guarantee of their value. They will be found of interest both to the General Practitioner and Specialist.

BOOKS AND PAMPHLETS RECEIVED.

"Direct Autscopy; Kirstein." By Robert Levy, M.D. Reprint, *Gross Med. Coll. Bulletin*.

"Some of the General Principles which should govern Operating for Otitic Brain Disease." By J. Orme Green, M.D. Reprint, Proceedings of Annual Meeting of Massachusetts Medical Society, June, 1897.

"Exaggerated Arytenoid Movement. Anchylosis of the Crico-Arytenoid Articulation." By Robert Levy, M.D. Reprint, *Annals O. and O.*



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IN THE TREATMENT OF

Typhoid

DR. B. D. HARISON, in *The Physician and Surgeon*, Detroit, Mich., Nov., 1896, says: "To eliminate the toxine and to promote skin drainage, I prescribe lactophenin. * * * It acts like phenacetin, but more slowly;

has a more calming and hypnotic effect, with no effect upon the heart except that the pulse becomes fuller and slower, while the breathing is unaffected. A moderate dose, 5 to 10 grains, is given every second hour if the temperature rises above 102°F ., until perspiration is produced. I cannot speak too highly of lactophenin as an antipyretic and hypnotic. I have used it altogether in my practice during the past three years to the exclusion of all other antipyretics, with never the slightest depressing effect upon the heart or circulation."

DR. W. C. BUCKLEY, in *THE LARYNGOSCOPE*, Feb., 1897, says that lactophenin applied locally is excellent treatment for tonsillitis. He continues: "It reduces abnormal temperature, but does not seem to exert any marked influence upon the circulation or respiration.

"I have used it in pneumonia, influenza, scarlatina, acute tuberculosis accompanied by fever and septicæmia, with excellent results.

"In the high temperature and restlessness of enteric fever (typhoid) it has also served me a most excellent purpose; here a child may take one or two grains with pleasant effect. The full adult dose is from four to sixteen grains. In giving this remedy, the proper plan is to begin with small doses, and increase according to effect produced."

DR. F. GORDON MORRILL, Visiting Physician at the Children's Hospital of Boston, Mass., in *Archives of Pediatrics*, March, 1897, in a report on the Treatment of Typhoid Fever in Children, says that they employ lactophenin, in 3 to 8 grain doses, which "are very effective, and do no harm, as far as my experience goes;" lactophenin produces a drop of 3.5°F . in four hours, according to their careful records. "Restful sleep may often be obtained in this way."

Quinsy

DR. J. HOMER COULTER, in *The Journal of the American Medical Association*, Nov. 7, 1896, says "In two cases I prescribed lactophenin, 10 grains every three hours; after the second dose Mr. B. was almost entirely relieved

of pain. In the case of Mr. R. the third dose relieved him quite as completely.

* * * I have used the remedy in twelve cases of quinsy, and in all but once instance the results have been most gratifying. * * * I have in these cases given the lactophenin to the exclusion of every other remedy internally, excepting the cathartic. * * * Its action is decidedly more prompt (than salol, etc.). It has thus far given no undesirable after-effects; it not only relieves the pain, but reduces the fever with an equal certainty."

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